DOMESTIC ENGINEERING

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It's high time the master plumber and fitter placed the blame for shoddy materials where it belongs,—upon the cheap maker and distributor. If the man who installs work realizes that he is building into the job his reputation and future business success or failure, he will refuse to use a piece of shoddy material. No one has a right to use him to pull off a confidence game on the consumer.

A Young Man's Opportunities are far Greater Today than Ever Before

Millions of young men in this country are dreaming of better days. They are not contented with their humble vocations and ceaselessly bemoan the fate that enthralls and anchors them amid uncongenial surroundings.

They see a man passing who has arisen to affluence through persistent efforts, yet they simply deem him "lucky."

They have been dreaming so long that they have really become pessimistic and conclude that this is the "money age" of the world and they cannot hope to attain success without a liberal supply of this world's goods to aid them.

So melancholy have they become that it seems as if the lobes of their brains have become incrusted with mental rust and their will power strapped to the word "indecision."

Why is this trait in young men so conspicuously noticeable at the present time? Is this an age, as millions suppose, when the young man's lot is harder than in the days of our fathers and forefathers? Has he the chance to climb to pinnacles of success, without the aid of money, or is he doomed to the most arduous pursuits without the prospect of more alluring inducements? In a word, what is the outlook for the young man entering upon man's estate in this, the most remarkable age of the world?

The man endowed with executive brains, physical capacity, aggressiveness and a comprehensive mentality will tell you that this golden age, above all others, is the one in which every young man has most alluring prospects if he will only seize and appropriate them. At the same time he will also tell you that this is an age of mental acuteness, as well as the "money age."

Long before the first land appeared on the western hemisphere, from Labrador to the Heights of Canada, and the fiery elements were lashing and leaping in terrific commotion many miles above where you now stand there was a tremendous struggle for supremacy. A similar struggle is now in progress upon our sun, only millions of times more terrific and often fairly convulses our entire system at the time the great sun spots gather in profusion on the side toward us. The face of our moon presents a most vivid illustration, with its sepulchral craters and lofty ramparts of a most violent struggle of the elements for supremacy before the curtain was rung down on that immense graveyard where raged a battle of the forces of nature more awe-inspiring than the comprehension of man will permit.

So has it been in all ages of the world from the dawn of life, both animal and vegetable, to this age of mental struggle for monetary supremacy. It is a case of **"survival of the fittest,"** now viewed from the standpoint of mental latitude instead of physical endurance, as in the days of Homeric triumphs, when **Helen of Troy** was so bewitchingly attractive and the unerring arrow left its deadly sting in the **heel of a conscienceless hero.**

One of the most potent factors that serves to undermine the possibilities for success in many young men of the present day is their **proneness to follow along lines of least resistance.** If they are employed at a stipulated salary they too often measure their salary and mental and physical efforts in behalf of their employer to the exact minute. They are afraid to donate any extra effort beyond a stipulated time, because they have pointed themselves to become automatically subservient to their own desires. They cannot bear to serve their allotted time longer or more intensely, although such a departure from the routine they have mapped out for themselves might **redound to their own advantage, mentally, physically and pecuniarily.** They drift along, mere automatons, bemoaning their condition in the human scale, but are unwilling to lift themselves above this plane by **arduous mental and physical development.**

Commanding personalities are not the result of passive adherence to custom and automatic regulation.

Individuality is builded upon a rock, not a sand foundation.

The **energies at your command cannot lie dormant** and you realize the fruition of their proper exploitation.

Conditions and circumstances may serve to blind the average young man to the possibilities that await him. They are like the fog that clears before the morning sun when once properly diagnosed and adroitly rendered submissive to an indomitable will.

Your alloyed wisdom teaches you to say that you are misunderstood. This is not so.

Only great men are misunderstood, in a comprehensive sense.

Generations have failed to **understand properly such sublime personalities as Jesus, Luther, Socrates, Pythagoras, Copernicus, Galileo, Newton, Goethe, Shakespeare and Aristotle.**

Sublimity of intellect is not the province of every man, but a measure of wisdom is vouchsafed him, provided he will only **marshal his energies and direct them in laudable pursuits.**

Is it any wonder we see so many dreamers among the young men of today, when their ambition is **dwarfed by following the lines of least resistance,** which, prolonged through life, is an imbecile course, ever and anon leading downward at the **approach of old age?**

Are they not **subjects of commiseration** when all through life they permit others to do their thinking, and consequently lay the foundation for their opinions?

In such cases **action** on the part of these young men is largely one of chance.

They are easily **swayed by emotion,** which becomes **a usurper of their intellect.**

The cold, logical facts upon which sound judgment rests an opinion are entirely obliterated from **their** category. They become a jest in the eyes of the solid thinker.

Self-reliance to them is mockery. Their judgment is defective. **Their will power** is without the requisite force to surmount perplexities.

Personality is developed only by sacrifice. It is relative and its basic principle is **sound judgment.**

Great personalities only achieve greatness through **laborious self-denial.** They become **masters of themselves** and thereby are able to mirror the traits and qualifications of others.

They absorb wisdom and radiate erudition.

They are thereby able to **interpret the future** along certain lines with an accuracy amazingly profound.

Erudition is the keystone of our remarkable development along commercial lines. Without it we should now be far behind the older nations of Europe.

The master minds directing the enormous enterprises of this country are **men of erudition,** academically or otherwise acquired, whose aggressiveness, coupled with a **consummate knowledge of the environments** of these enterprises, has enabled them to **forsee the goal** toward which they bend energies that know no **faltering limitations.**

A majority of our great financiers and captains of industry arose from poverty by heroic self-denial and undaunted courage and application of their convictions. They are men who have acquired **executive brains** by a thoroughly **practical knowledge** of their undertakings, coupled with a **theoretical mastery of possibilities,** which enables them to succeed in enterprises of rare magnitude.

Young men, take the advice of the writer of this article, who is also a young man and endured heart-rending struggles to obtain an education and subsequent success. **You cannot afford to waste your time idling.** Your possibilities are **only limited by your capacity to attain success.** Your capacity may be **multiplied a hundred fold,** or stultified by mental inactivity.

This century will see the grandest battle of brains in the history of the world.

Achievements far beyond our most sanguine expectations will be the result of this **titanic struggle for world supremacy.**

Every young man of normal attainments may infinitely **better his present conditions by application.** You should throw **your whole heart and soul into your work. Study your surroundings.** Use every opportunity to **better your position** by acquiring more **knowledge** of the business in which you are engaged. Spend your idle moments in **reading books** that will have a tendency to **build your mental faculties and improve your range of vision.** Nine tenths of the present day reading is trash. It will simply help you kill time. **Avoid it. Read good literature, history and scientific works.** Read works that will **lay a foundation** for your subsequent mental development—works that will **aid you in solving the great problems** that will confront you in the future, through a diagnosis of the momentous events of the past, and consequently equip you for any arduous undertakings.

Cease lamenting. Go to work to build brains. Your destiny lies in your willingness to aid yourself. Properly directed brains will win. Elmer Crawford.

The Ventilation of Schoolhouse Toilets—II*

By Charles L. Hubbard

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Table II gives data for exhaust fans when used with a flue heater and when the vent flue is provided with a damper.

Table II.

Nominal size of fan. Height of housing, in inches.	Diameter of fan wheel, in feet.	Width of housing, in inches.	Ordinary speed, in rev. per min.	Cubic feet of air delivered per min.	Horse-power of motor.
30	18	9	850	1,000	½
35	21	10	750	1,300	¾
40	24	12	580	1,600	1
45	27	14	500	2,300	1½
50	30	15	460	3,000	1½
55	33	17	430	3,600	2
60	36	18	400	4,800	2
70	42	21	330	6,500	2½
80	48	24	290	8,000	3

Fig. 7 shows a disk fan for use under similar conditions. This may be placed anywhere in the horizontal duct, but is more commonly attached to the face of the brick flue as shown in the cut. This type of fan may be placed directly in the duct instead of in a by-pass, as in Fig. 5,** by selecting a fan of such size that the area of the fan circle is equal to about .7 of the area of the horizontal duct. When the fan is not running it obstructs the duct but little, and only at a single point, so does not interfere to any extent with the gravity flow of air through the pipe.

This article tells how the Air in Schoolhouse Toilets can be renewed

When a stronger draft is required the fan may be started without the use of shut-off or by-pass dampers. This arrangement requires a larger fan at a slower speed than would be required if it was not desired to pass the air through under gravity conditions, but its simplicity often makes it cheaper in the end than an arrangement of by-pass and damper and high-speed fan. Table III gives average capacities of disk fans at normal speed

Table III.

Diameter of fan, in inches.	Speed of fan, in rev. per min.	Cubic feet of air moved through vent flues per min.	Horse-power of motor.
18	880	1,700	.2
21	760	2,400	.28
24	650	3,100	.36
30	530	4,900	.60
36	440	7,000	.80
42	370	9,600	1.20
48	330	12,500	1.50

The size and speed of fan for this class of work and the power of motor for driving it will depend to a considerable extent upon the size and length of the ducts and flues through which the air is drawn. For the exhauster type of fan when used in a by-pass, as shown in Fig. 6** will handle a comparatively large volume of air for a given speed, because the resistance is small, the main flue being proportioned for gravity flow on a basis of about

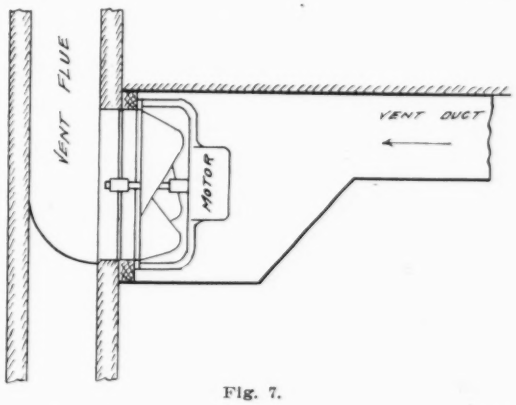


Fig. 7.

300 feet velocity per minute. Under these conditions the following table may be used with approximate results:

Table IV.

Diameter of Fan Wheel in Inches	Revolutions Per Minute	Cubic Feet of Air Per Minute	Horse-Power of Motor
18	770	1200	.4
21	710	1500	.6
24	580	2000	.8
27	510	2800	1.0
30	460	3400	1.3
33	420	4200	1.6
36	390	5000	2.0
42	330	8000	3.0
48	290	10000	4.0
54	260	13000	5.0
60	230	16000	6.0

If the arrangement is for fan exhaust only, velocities of 700 to 800 feet per minute may be allowed in the main vent shaft, but for a given size and speed of fan the air volume and horse-power given in Table V. should be reduced about 25 per cent.

*The first instalment was published in the issue of October 17, 1908.

**See page 59 in issue of October 17, 1908.

For the average disk fan used, as shown in Fig. 7, with low velocities through the main ducts, we may use the following figures given in Table V:

Table V.

Diameter of Fan Wheel in Inches	Revolutions Per Minute	Cubic Feet of Air Per Minute	Horse-Power of Motor
18	530	1000	.06
21	450	1500	.10
24	390	2000	.15
30	310	3000	.20
36	270	4200	.30
42	230	5800	.40
48	200	7500	.50

Motors for this class of work should be direct-connected when a direct current is available, as they run more quietly both on account of the lower speed and the absence of belts. When an alternating current must be used great care must be taken in the matter of reducing sound and vibration to a minimum. This is especially true if the apparatus must be placed in the attic of a building. In this case, both fan and motor should be supported on brick walls, and if this cannot be done, they should be supported on platforms hung from the roof.

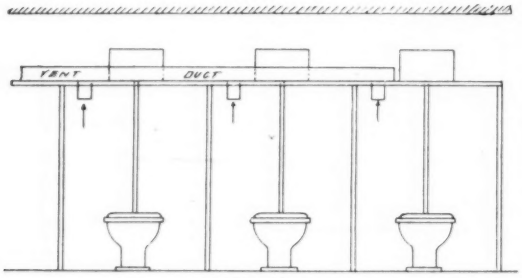


Fig. 8.

The methods mentioned thus far apply to new buildings where fixtures with local vents and ventilating chambers can be provided.

It often happens that it is desired to improve the toilet ventilation in a building already erected and in which old style fixtures without local vents are used. In cases of this kind one must be governed somewhat by circumstances, but in any case a suitable flue must be provided, either for gravity or fan discharge, as seems best.

Fig. 8 shows the simplest method and least effective. It consists of a duct carried over the closets just in front of the flush tanks and provided with an opening about 4″x6″ over each fixture. It will be necessary in this case to place a sleeve and simple damper in the openings nearest to the main flue in order to equalize the flow of air through them.

In the other arrangement (see Fig. 9) pipes are carried down and the discharge outlet located on a level with, or just above the top of the closet seat. This is more effective in carrying away odors and does not tend to remove so much heat from the room as when the air is taken in at a higher elevation.

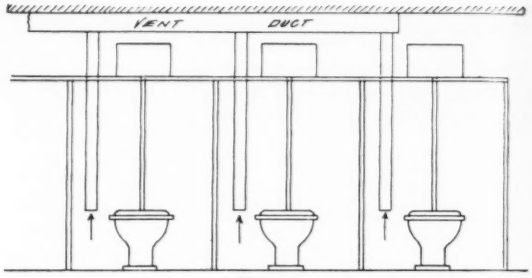


Fig. 9.

Fig. 10 shows a successful method which may often be employed when it is desired to secure the result of an actual local vent where old style fixtures with flush pipes only are in use.

The simplicity of this arrangement is evident from the cut. In this case the flush pipe is made to serve as a local vent also, when not employed for its original purpose. The small vent ducts covering the open ends of the flush pipes are sealed by the water in the tank, except for a short period after the closet has been flushed, and during this period the duct still assists in the general ventilation of

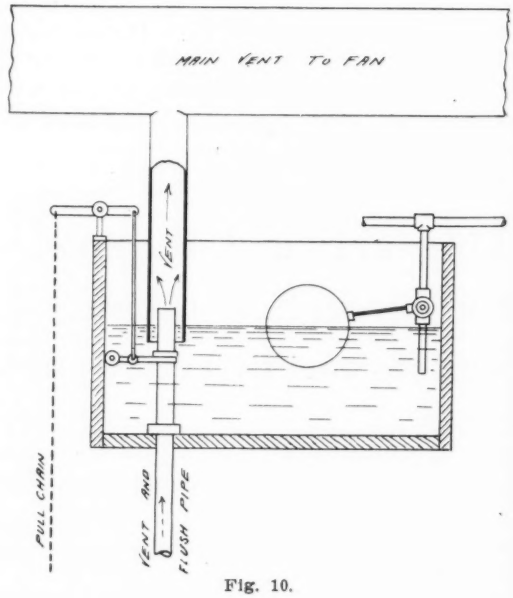
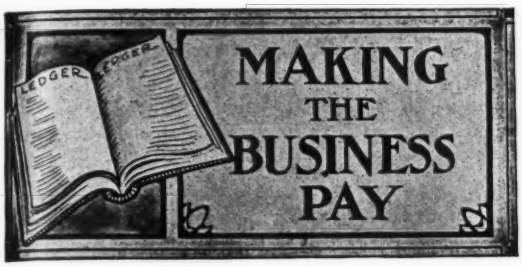


Fig. 10.

the room. Arrangements of this kind must necessarily be used in connection with an exhaust fan, as the flush pipes are of too small a size to work well under a natural draft.



Letters from a Retired Successful Plumber and Steamfitter to His Nephew, Still in Business

XII*

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WHAT RIGHT MANAGEMENT DOES FOR THE SHOP AND OFFICE.

Dear Jim:

I never knew about this management business, or what it meant, or troubled myself to think along management lines, until, back in '90, I happened to compare the work of the same men on about the same kind of a job. That certainly did open my eyes. Happened to have two fifty dollar jobs—about the same kind, they were—to do at about the same time. One was for Judge Daubner, and the other for Jay Perry. You remember both men. The Judge was a harsh looking old gentleman; used to be Colton say-so that he had eyes that'd look right through your head and tickle the hair behind; and Jay, well, Jay could tell the best story in the county, and tell it oftener than any other man I ever knew.

Well, I was busy at the shop, and sent the men up to Judge's first. Blamed if those men didn't get through, pack up and come back to the shop at about five o'clock on the same day they went out. Through, too. Same men spent the better part of three days on Jay's job. Same men—same kind of a job. But the atmosphere was different at the two places. The Judge would give those men a casual glance now and then, and they'd hustle. Jay, on the other hand, would tell a yarn—maybe two—and first thing the men would know, it'd be noon or night—and no work to amount to anything done. And neither of these men—Judge or Jay—was bossing the job, either.

I figured out in those days—it was before I had a cost system—that the money I lost on one job, I made up on the other, so it struck an average all right. And from this wrong conclusion, I got to thinking about right and wrong management. I could see that the men up to Jay's were made just a trifle too comfortable—the negative side of the subject—but I've been studying till now to find out *just* why the same crew did three times as much for Judge Daubner.

Your brother, who is studying over to the college, says that no man ever does his best unless he is "coaxed or kicked into it;" but that doesn't help, for the Judge just *looked.*

Well, anyhow, you have got to handle your labor just right, or you are going to lose money on it. Just take a pencil and figure what part of the money you pay out is paid for labor, and then see if it doesn't strike you that every employing plumber and steam fitter ought to be a good manager of labor. How to do it?—well, I am blessed if I hardly know what to say. I can always get the last ounce of work out of the machine that I have bought and paid money for, but I never was any *too* good in getting work out of my men. So you'll have to rely on what's been *told* me, rather than what I've really done along this line. But a short time ago, I asked a manager here in the city, who has about eight hundred men under him, what he could tell me about managing help. His men all like him—will do anything for him—and yet he gets about twice or three times as much work out of each one of them as any other man in his business. Questioning him closely about the matter, he asked me abruptly, "Did you ever drive mules?" I answered that I had, though I didn't see what that had to do with the problem. Then he followed it up with another question: "Ever take care of a young'un—a little niece or granddaughter about six or eight years old, that you thought the world of?" Again I was compelled to answer that I had.

This article tells how to get the best and most work out of your men

"Well," he said, "just cross these two methods of management and you have the right way of handling men."

But on studying on the right kinds of labor management, I found out that he must have been quiz-

*Previous letters in this interesting and instructive series were published in the issues of May 23, June 6 and 27, July 11 and 25, August 8 and 22, September 12 and 26, October 10 and 24. These back numbers can be obtained for 10 cents a copy.

zing me a little; that in handling help the essence of the matter seems to rest on knowing the business and in treating the men fair. Any man, no matter whether he's a cheap waiter or a high-priced skilled worker at a trade, always does better when he knows that the "boss" can spot poor work, and can tell good work as far as he can see it.

So, to get good work and general satisfaction, talk over past work, work in hand, and work to come, with the men. Show them that when their hands have been at work, your head has been working as well. When you go to a job and pick out the difficult parts, and have a word of praise for them; and when you pick out the points that have been slighted, and have a word of condemnation for them—you are earning a respect that will take the place of actual oversight. For no man can "stand over" his men and watch them; particularly in our business, where workmen do so much work away from all supervision.

So, let your men know *your* business; talk over *their* business with them. That'll get you quality. Now for quantity.

Did you ever think, Jim, what a lot 'twould show any man if he'd set down in the morning what he intended to do during the day, and then at night list up fairly what he'd actually done? The old proverb about bragging about the day in the evening applies here. Ask any man in your employ how much work he can do day in and day out, and he'll set a figure just twice as big as the day's work record will show—and be perfectly honest about it, too.

So, to get quantity, get the work on record. Estimates figure what probably will be done; the daily work record shows what actually has been done.

Again, to get quantity, put up to each man daily just as much work as you think he can do—maybe a trifle more. Nothing pleases a shirk so much as to be able to justify himself by running out of work; nothing annoys a good man more.

About consultations—getting the men together to "talk things over"—that works on some things and does not on others. Don't be afraid to try it; see if the amount of work doesn't increase after the "efficiency meeting" has been held.

So much for labor. Now for the next most important part of the management problem. Learned my lesson from "Put" Wilson, who used to hang 'round the shop—we never called what he did, work. "Put" or "Putter"—as we called him, because he was always puttering at some light job—got sick one winter, and it seemed as though everything went wrong. Tools out of place, machines breaking down, men growling 'cause everything was out of place—regular monkey and parrot time. To make an honest confession, I'd rather begrudged "Put" the dollar and a quarter I used to pay him in return for a day's work—till he got sick. Then, 'stead of thinking of him as a mere putterer, I saw him in his true light, a *M.M.D.*—Master of Mechanical Details, and a good one at that.

Every town has a man that just fits this place, and Colton is no exception. The secret of good shop management is to get such a man as "Put" to taking care of the shop details, while you fix your mind on the bigger things. Financing, for instance, as I have written you, is such a big question that you had better spend your time on that rather than trying to take the kinks out of a refractory machine that needs half a day's puttering attention.

It looks like a small thing to keep things running smoothly, but only the best management does it. You've heard Doc Ciphers tell his celebrated story about the fellow who put a cent's worth of pulverized emery in the engineer's oil can, and how that unfortunate individual ground out every bearing on the new mogul locomotive. Well, Jim, small things neglected in the operating department, or any other department as well—will cut out profit and comfort and everything else you're in business for, just as sure as emery in the oil will grind out a bearing. But—and here's a big but, too—you can't

Office of H. L. McKown & Bro., an old established and prominent plumbing firm at Wheeling, W. Va. H. L. McKown is seen at his desk writing and the lady in the picture is his bookkeeper, Miss Anderson.

afford to attend, yourself, to those small things; it'd be too much like a steam threshing engine running a boy's jig-saw. Fix your mind on the big things, Jim; better be spending your time figuring to get to be a chairman of the Colton City Improvement Association than straightening a crooked shafting.

Now, for the office. There is no reason in the world why your office shouldn't be fitted out so as to run just as smoothly as any other business. You buy new machines for the operating department and new goods for the store, so see that the office is not neglected. Without getting up from your chair, you ought to be able to tell the amount of stock you have on hand, the profit you made on jobs and contracts for the last year or two, prospective customers, cost of advertising, and what returns it brought, and all much other such information. You can't sail the business ship without a chart; records—handy—ready—at your finger-ends—give you your chart. Your good brain will give you sailing orders. It remains for you to put your finger on the ports you wish to make—those of Independence and Profit look good to most of us—and say, "I know where I'm headed and how I'm going to get there." You'll do it; good management always does. Your

UNCLE JOHN.

Relax your discipline too much and you get disorder. Hold your men too tight and you get insubordination.

Tragedy.

She'll be married to-night! And I'll be there to see
The fun and the tears and the joy.
She'd be hurt, to be sure, were I absent—for she
Was my playmate when I was a boy.
My playmate! Ah, yes, and the chum of my youth,
And my ideal, as years took their flight—
The one girl of all that I cared for, in truth—
And she's going to be married, to-night!

Does she dream how it's hurting my heart to be there?
Can she guess all the anguish I'll feel?
She will look in my eyes—will she know, will she care
For the pain that my face may reveal?
Will she note if I shudder in sudden affright
At the solemn words sealing my doom?
Will she pity? Who knows, who can tell? for to-night
She'll be married. And I am the groom!

—Cleveland Leader.

"I hate to see a man's arms drop as if he was shot before the clock's fairly struck, just as if he'd never a bit o' pride in's work. The very grindstone'l go on turnin' a bit after you loose it."—George Eliot.

Should the Law Prevent the Owner of a Building from Doing His Own Plumbing Work*

BY WM. J. MULLEN

Member A. S. I. P. S. E., Plumbing Inspector, Aurora, Ill.

NO DOUBT many of you, who are here present, may be more familiar and conversant with this matter, but I shall, however, endeavor to put before you my opinion and judgment in this important question. In Section 3 of an act of the General Assembly of the State of Illinois, entitled, "An act to provide for the licensing of Plumbers and to Supervise and Inspect Plumbing," approved June 10th, A. D. 1897, enforced July 1, A. D. 1897, we read that "any person now or hereafter engaging in or working at the business of plumbing in this state, either as a master plumber or employing plumber, or as a journeyman plumber, shall first receive a certificate in accordance with the provisions of said act." The legislature in the exercise of its power and duty

This paper tells why no owner of a building should install his own plumbing

to promote the public health passed this act to secure sanitary plumbing in buildings, to secure the public against the dangers to health arising from unsanitary plumbing.

The esteemed Attorney General of this State some months ago expressed an opinion that under this law, the owner of a building who is not a certified plumber, could not be convicted for doing plumbing work in his own building. His opinion was that the law only applied to those working at or engaging in the business of plumbing.

If it is necessary for the health of the public that the legislature should pass a law to make the man who is daily working at the business of plumbing pass an examination to qualify him as a

*Read at the third annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held in Chicago on February 10-12, 1908.

plumber, should such a body of men pass a law that would permit anyone to install plumbing simply because it is in his or their own property? Should not the owner of a house, into which he is to bring his beloved ones, be even more particular and try more than anyone else to prevent the deadly germs of the sewer from entering that home through defective plumbing? Why should any man be permitted to subject his family or the families of his tenants to such dangers? It is not necessary for me to describe to you, gentlemen, the class of men who think they can do their own plumbing just as well as any plumber. You all have met them, the same as I have in my past experience in the business of plumbing, as a journeyman, master plumber and inspector.

We, as inspectors, in whom the people must place confidence and rely to see that their homes are absolutely safe in regard to sanitary conditions, must be ever on the alert, to see that the work is done so as not to allow the gases from the sewer to enter their homes. Physicians tell us that the sewer gas brings about conditions that will breed the deadly diseases of diphtheria, scarlet fever, typhoid fever, etc.

In the past year as plumbing inspector I have had many experiences with the work of the man, who can do work just as good as the plumber, and not in one such instance have I found a job that would do credit to a six months' apprentice. I would like to state right here, that I did have one plumbing plan submitted to me by a house-owner—at least he claimed it was a plumbing plan, but all the plumbing that I could make out was three rings made on the plan, marked "Bath," "Lavatory" and "Closet." Such is the plan of one of many who can do plumbing work just as well as a plumber.

I do not believe that our state legislature intended the word "business," as used in Section 1 of the law, should be construed as it was by our learned Attorney-General. I think that the legislature intended to legislate for all plumbing work in the cities and towns classified.

I do not believe it would be "class-legislation" if the law stated than any person doing plumbing work without a certificate would be prosecuted according to the penalty of said act. I am just as strongly in favor of the house-owner doing his own plumbing work, if he is capable and passes an examination, for it is probable that sometimes a plumber may own a house or a building of his own.

I cannot say that I am favorably impressed with the state law as to the examining board. Nor do I believe that every city should have its own board. It is not a good thing for the city, nor does it lessen the work of the plumbing inspector. We should have a State Board of Examiners of Plumbers and only one in the state; the fee should be the same whether the applicant passes or not. The doctors, pharmacists and lawyers have but one board to go to, and it meets at stated times. I have many reasons for my stand in this matter, which are not necessary to be explained here.

The reason for regulating plumbers' work is its bearing on the public health. Why should this law not be taken just as seriously as the one concerning doctors or the pharmacists? No man is allowed to take the responsibility of administering medicine to his own family, unless it has been prepared by a registered physician or a pharmacist, and if he does, and serious complications set in, it is a penitentiary offense. The same law should apply when it is found that the condition which brings about sickness and death in a family is due to unqualified men tinkering with the plumbing

"Hymn 999." Vivian Grey is a pioneer member of the plumbing trade at Watervliet, N. Y., and he is here shown with his two ambitious sons. Photograph by our Mr. Winslow.

system. I wish to say to you, gentlemen, that if the Attorney-General is right (but he has never proved it), that any man can work at the plumbing in his own house, regardless of his ability to do it in a sanitary manner, then there must be more legislation on the subject. I believe that a man doing plumbing in his own home must first pass an examination.

The law says, in Section 5, that "each city, town or village in this State having a system of water supply, or sewerage, shall by ordinance or by-laws, within three months after the passage of said act provide rules and regulations for the materials, construction, alteration and inspection of all plumbing and sewerage placed in or in connection with any building in such city, town or village, and the Board of Health or proper authorities shall further provide that no plumbing work shall be done, except in case of repairing leaks, without a permit being first issued therefor, upon such terms and conditions as such city, town or village shall prescribe."

Suppose the City Council under this grant of power passed an ordinance, which is the case in my city, prohibiting the issuance of a permit to any but a certified master plumber. Now then, if the city official under the ordinance cannot issue a permit to any one but a master plumber, having a certificate, how can he issue a permit to a house-owner without such a certificate? According to the Attorney-General we have a conflict between the State and the ordinance passed in pursuance of it. It does not seem to work out right both ways, and I believe that the Attorney-General of the great State of Illinois is very wrong in his opinion given to the press some four months back.

No one questions the right of any person in this country to follow any legitimate business or occupation he may see fit. This is a privilege open to everyone; his own labor and the right to use it as a means of livelihood is a right as sacred and as fully protected by law as any other personal or private right. But, broad as this right may be, it is subject to the right of every government to impose such restraint and to provide such regulations in regard to the pursuits of life, as the public welfare may require. The State has the paramount right to make laws and regulations necessary for the protection of the health, morals and safety of the public, strictly within the legitimate exercise of police power.

The plumbing business is a business or occupation or profession of such a character as to require a special course of study or experience to qualify one to pursue such a business with safety to the public interest and no one can question the power of the legislature to prescribe requirements as it may deem proper for the protection of the public against the evils resulting from incapacity and ignorance.

I should like to make a recommendation to this honorable body that we who are present here today work in harmony with one another to have the law of 1897 amended to read: "Any person or persons about to perform a job of plumbing in his own or any other house or building should first pass an examination by the State Board and receive a certificate therefrom, and produce such certificate showing his qualifications, when applying for plumbing permits."

In Early Days—XII

By Herbert S. Renton

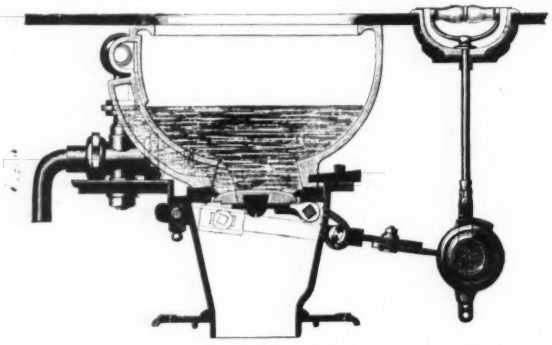
The Passing of the Pan and the Progress of the Plunger

The smallpox was raging in Charlestown, Mass.—now a part of Boston—and it was just after the Boston fire, which occurred in 1872, a year after the Chicago fire. Knowing nothing of the scourge until I got there, I tramped around the place, which looked in certain quarters as though the town was for sale, so many red flags were stuck out as a danger signal from houses where the plague was. I was young and optimistic, so the danger did not scare me very much.

I had been sent from Brooklyn to settle up a lot of business connected with Boyle's patent pan closets. I reached Boston in the early morning on Sunday, two weeks after the great fire, which had melted huge stone warehouses as though they were wax. In passing through the burned district I did not meet a living soul, not even a dog, in all that region, black and blasted, where a brief fortnight ago there had been more excitement and activity than old Boston had ever known since the Revolution.

The next day I began my work, trying to get paid for batches of pan closets which had been allowed to come on consignment by half the plumbers of Boston—but which were reported as genuine sales. I went through Charlestown (where I first saw the light),

and in spite of the prevalence of disease I was able to fulfill my mission. My instructions were to settle for any price I could get, on the principle of the salesman who was advised by his firm as follows: "If you can't get $17 a dozen, take $7 a gross; what we want is **orders!**" The calculation was that by the time those closets had been carted and freighted back to New York they would be a lot of scrap iron. I ingenuously explained that my father had sent forward the goods under a positive assurance that each plumber had ordered them, and that if they would keep the articles they might have them at their own price. To the lasting honor of the plumbers of Boston, they did not



Sectional view of Carr's "Defiance" water closet. From Huber's 1881 catalogue.

take advantage of my youth and inexperience, but, with a part of their city in ruins and the scourge in Charlestown, they gave me a fair price. I remember with gratitude to this day the man who had received the heaviest dose of those old **pans** and who wanted them least, yet paid the best price of all—I. N. Tucker, of Tremont street.

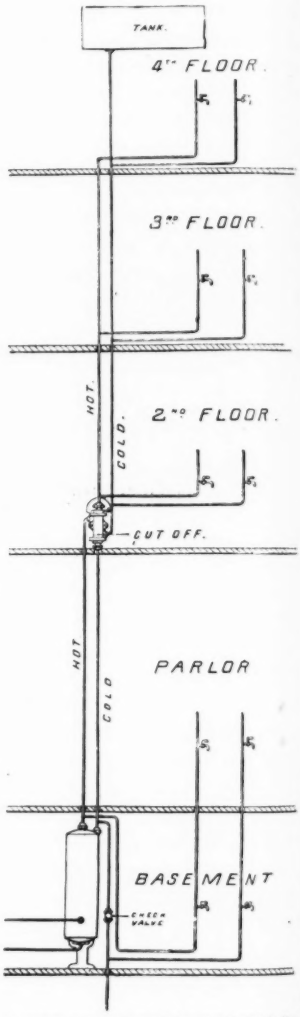
Once in a while I met a skeeziks who pinched me a little, but I found plumbers who would take what some of the others positively refused at any price, and got back to New York with a bunch of money and the satisfaction of everybody, except the **agent** who had reported the **sales.**

James E. Boyle was a real sanitary engineer before George E. Waring claimed the title. Plumbers laughed at the term when it was first applied to Waring, but he certainly vindicated the title, as his work in organizing the street cleaning "white wing" service in New York and his services in Cuba abundantly proved. He was an enthusiastic advocate of the Dececo Siphon Closet, which claimed Newport as its headquarters, but the man really to start the siphon closet business was ahead of Waring—Capt. James E. Boyle.

At the time of the Boston episode with Boyle closets Boyle was not prominent in the trade. His valve was an ingenious affair, with a cylinder and plunger, fitting so snugly that corrosion always put it out of commission, and the only plumber who could fix one so that it would not get out of order was Edward Murphy, and he never told me how he did it.

I recall that Boyle's charge for a stamped brass plate to be soldered on the valve was 50 cents, and we had a lot of them to play with long after the valve had become a drug in the market, every one of which represented a half dollar paid to Boyle.

Later he produced for Henry Huber & Company his celebrated "cut-off" (shown herewith) to take the place of a double boiler (page 193, Huber's catalogue of 1893). The description is subjoined: "In dwellings where the street pressure is not sufficient to deliver water in the upper part of the house, it is customary to supply this portion from a tank which fills at night through a float valve, or into which the water is forced. This arrangement answers well for cold water, but in order to provide the upper stories with hot water two distinct hot water systems become necessary, or the employment of two boilers, one within the other, one holding hot water under high pressure, supplied from the tank and connected with the faucets on the upper floors, and the other, being the low pressure boiler, supplied from the street main and connected with the faucets on the lower floors. To save the complications and excessive cost of the two boilers and their connections, this cut-off was devised. * * Operation: (see illustration)—The cut-off is on the second floor and connected with tank above on fourth floor and a boiler in the basement. The faucets on lower floors (in this instance basement and parlor) are supplied from street pressure, and at no time from tank pressure.



Boyle's patent Cut-off for tank and boiler. From Huber's 1893 catalogue.

"At the moment when a hot water faucet is opened on the upper floors the boiler is put under high pressure and hot water will flow from the boiler through the cut-off and thence to the open faucet above. Closing the faucets shuts off the tank pressure from the boiler immediately.

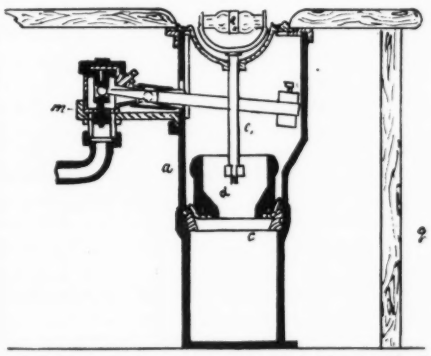
"It occurs quite often that the valve in the cut-off is lifted through a pulsation in the low pressure pipe caused by pumping from the street main in the neighborhood, in which instance a horizontal check valve should be used at the street pressure coupling."

If the street pressure could supply the second floor the cut-off was placed on the third floor; if it only supplied the basement the cut-off was put on the parlor floor. Boyle's cut-off was like the Darky's coon trap and would "catch 'em going or coming."

Between Boyle's "Tidal Wave," the first of the siphons, there were sanitary hoppers and traps with flushing rim, Helyer's flush rim, hoppers tall and short, Carr's "Defiance" for direct pressure and for cistern, Mott's "Demarest," Zanes' "Sanitary" and others which claim our attention, so we will cut off Capt. Boyle for a while until he enters as the pioneer of the type of closet which is the standard of the present.

Like the original pan closet, the first of the so-called sanitary closets came from England, and one of the claims was a siphon trap, but, as we shall see, this does not invalidate the claim to priority for siphon action closets of Capt. Boyle.

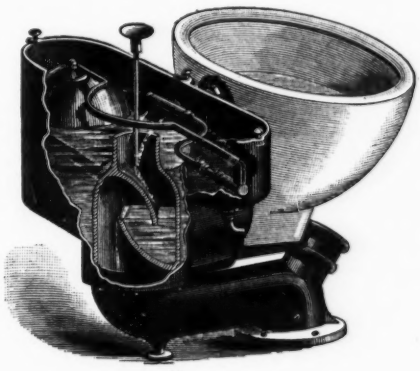
Josiah George Jennings, of Palace Wharf, Stangate, London, was the patentee of the forerunner of the new era in closets. (The patent bears No. 137,082.) His description and claims are very short: "A siphon trap with a glass seat. The supply of water to the closet is obtained by a valve so arranged as to discharge each time it is opened a regulated quantity of water into the pan before it is again able to close. Claim 1.—A



The Jennings siphon trap, patented March 25, 1873.

non-corrosive valve seat c in the described combination with the valve d and its lifting apparatus bracket m and water supply valve f, as shown and explained. 2.—The siphon trap a, with a side opening or socket a in the ascending limb thereof, to which a pan b is adapted, substantially as described." The Jennings patent was issued March 25, 1873. It had a great run in England, and thousands were sold in America, but the Jennings was never popular with the trade. It had too many working parts which could only be obtained from the Myers Sanitary Depot in Beekman street, and A. G. Myers practically lived on "repairs" for years. It might cost a hundred dollars to put in (they never installed in those days) a Jennings closet, and before long another hundred or so would be required to fix it from time to time as it failed to work. The exception usually proves the rule, and some of the Jennings closets would be perverse and work to admiration indefinitely.

Myers' Sanitary Depot sold a closet called the Egg Oval, because the outlet of the bowl was egg-shaped, as shown in the accompanying illustration. The theory was that the closet emptied more rapidly, and the statement was made that sewers are now constructed of this shape to give greater scour and velocity to the flow. The supply valve to the Egg Oval was a modi-



The Egg Oval Valve water closet. From Myers Sanitary Depot's 1886 catalogue.

fication of the common cistern ball cock. It was specially fitted if the pressure was to be over 75 pounds. The Egg Oval was one of the Jennings children, and, like the Zane, held a body of water.

The Myers' Sanitary Depot had no connection at all with Henry C. Meyer. It was owned in 1886 by Samuel G. McFarland, so long with the J. L. Mott Iron Works, and A. G. Myers, a nervous little man with sandy hair and a sanguine temperament. He went out of business soon after printing his catalogue, in which were pictures of the very largest buildings in New York, with the statement that they were "fitted up" with Myers' Sanitary Depot products.

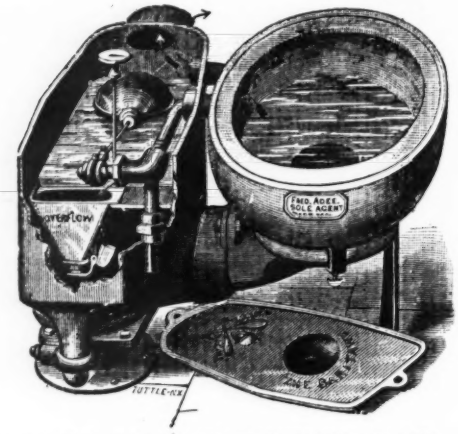
In Carr & Sawyer's time pan closets were called closet engines. The Jennings was an engine, sure enough. Carr's Defiance was another engine—a disc or clapper being substituted for the old hollow pan (see Huber's catalogue 1881, page 9). This was patented nine months before the Jennings, and claimed the advantage of a direct outlet, but the Jennings siphon trap gave it precedence.

Mott's Demarest Climax was still another engine like Carr's. The pan in Jennings' description, by the way, refers to the pot or receiver, and not to the hollow dish, called a pan, used on old-style closets.

When the Jennings had demonstrated the salability of new-fangled closet engines a Yankee notion came from Boston, patented by Joseph Zane, and the J. L. Mott Iron Works in the same year, 1877, put out the "Demarest," but in 1879 Henry C. Meyer & Company began a campaign with a simple flushing rim bowl and hopper that started the avalanche which finally bowled

out all kinds of mechanical closets, placing all the working parts in the tank. Meyer, however, was stricken with the same disease that afflicted other manufacturers in making the Hellyer valve closet—a complicated affair—after he had struck the real note with the Hellyer Flush Rim Hopper, patented in 1879.

The Zane and Demarest idea was to make a **well** of a closet, so as to prevent the escape of gas from the soil pipe, and they combined practically the tank and the closet. When a cistern was placed overhead there was an auxillary one in the closet itself. Indeed, the Demarest patent **plunger** called for a **dam** and an **overflow** opening, so that even the valve was a reservoir.



Zane & Co.'s water closet. **Patented May 1, 1877.**

The Boston Zane patent, assignor of one-half to Francis Roach, was dated May 1, 1877, and issued under No. 190,178. This patent is an interesting document. It called attention to an **oval** discharge opening, and recommended **ventilation** to a **hot place.** I believe the whole thing finally reached a hot place, namely, the melting furnace. The text is very interesting, however. There were five claims: "1.—In a reservoir water closet the combination of reservoir B with the bowl A by means of the inclined outlet C of less vertical than horizontal measure, and fitted and formed to receive the bowl A, substantially as described. 2.—The described means of ventilating the reservoir B and bowl A by the communication I, between the reservoir and bowl and the communication K from the reservoir to a ventilating flue, substantially as described. 3.—The spring compression cock herein described, in which the valve is compressed to the seat against the flow of water solely by an independent spring, and the spring pressure is relieved and the valve raised by single acting screw cams, rotated against the pressure of the spring by a short handled ball deeply immersed and with a very slight power of flotation. 4.—In a reservoir water closet, the combination of the covered reservoir B, automatically supplied with the water discharged into the bowl and regulated in quantity by mechanism in the reservoir and having a gas escape I, provided between the reservoir and bowl, with a soil pipe D, whose capacity for discharge is sufficiently in excess of the water supply to create a draft through said communication I during the discharge of bowl, substantially and for the purpose described. 5.—The combination of the stench trap C with the cock H, provided with a hole for the escape of water into the top of the stench trap when the cock is open, whereby the water seal in the stench trap is prevented from being broken by evaporation, substantially and for the purpose described."

Phew! It was a stunner! What with its short-handled ball compression cock, deeply immersed; mechanism in the reservoir, gas escape to a hot flue, draft caused by big soil pipe, and water seal stench trap this **engine** was a wonder! You could not give them away today, but twenty-five years ago the "Zane" was the rage. I saw Joseph Zane's little place in Sudbury street, Boston, in 1881, piled up with the red engines with white bowls and complicated brass fixings, ready to go out, and an enormous business was indicated in the one-time narrow plumbing shop. Joseph Zane evidently believed when I was there that the last word had been spoken in sanitation and that the red monstrosity was destined to go down the ages as the final expression of human genius in sanitary closets. I did not think much of it, but I did not say a word, as any expression of dissent from the opinion that the Zane closet was absolutely supreme and satisfactory might call forth unpleasant consequences. I lived to have my wagons cart away tons of them from jobs where they had been taken out, and from plumbers' shops, to get them out of the way when the wash-outs came into vogue.

When Fred Adee & Company, of New York, manufactured the "Zane Closet" as sole agents they described a cistern in their circular: "These water closets are now made (and kept in stock by the undersigned) with a large, full, one-inch water way through the ball cock, expressly for use under pressure from cistern overhead, say five to thirty feet above the closet, thereby securing a first class flush from very low pressure. We also make them with a **reduced water way** in ball cock for extremely heavy pressure, say 60 to 150 pounds per square inch. Where the pressure to be resisted is between 15 pounds and 60 pounds our regular closet, of which there are at present 30,000 in use (1889), will be found reliable in every case, but for very high or very low pressure (which should be stated when order is given) those with very large or very small water way through the ball cock will in either case secure a perfect flush. Parties adopting these water closets will find at the end of ten or fifteen years that they are what we boldly claim—**the best in the world.**"

In fifteen years it would have been very hard to find a dozen of them in use.

Temperance Movements.

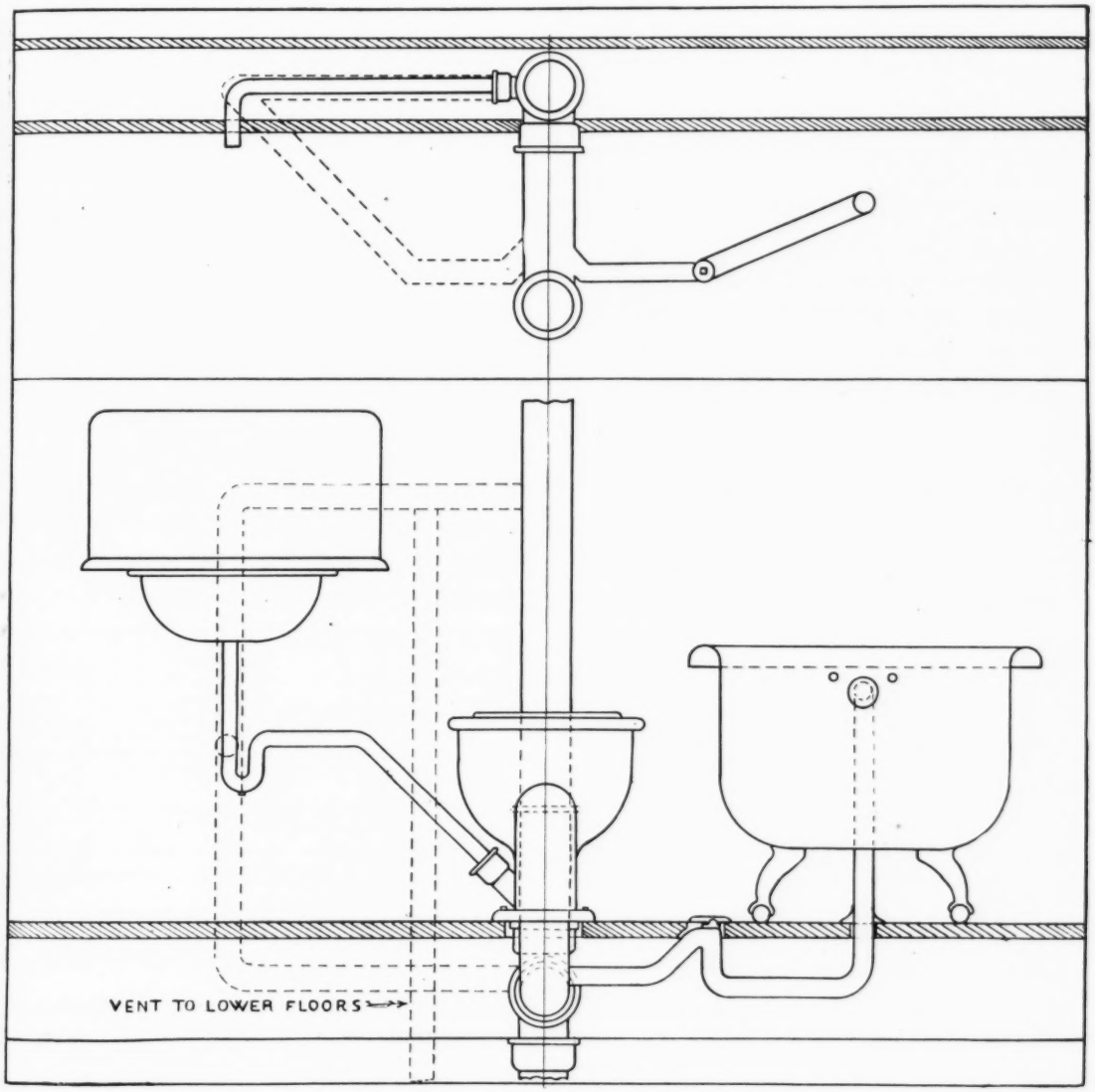
"George," spoke his better half, "you are interested in the temperance movements, are you not?"

"Why, certainly I am," he answered.

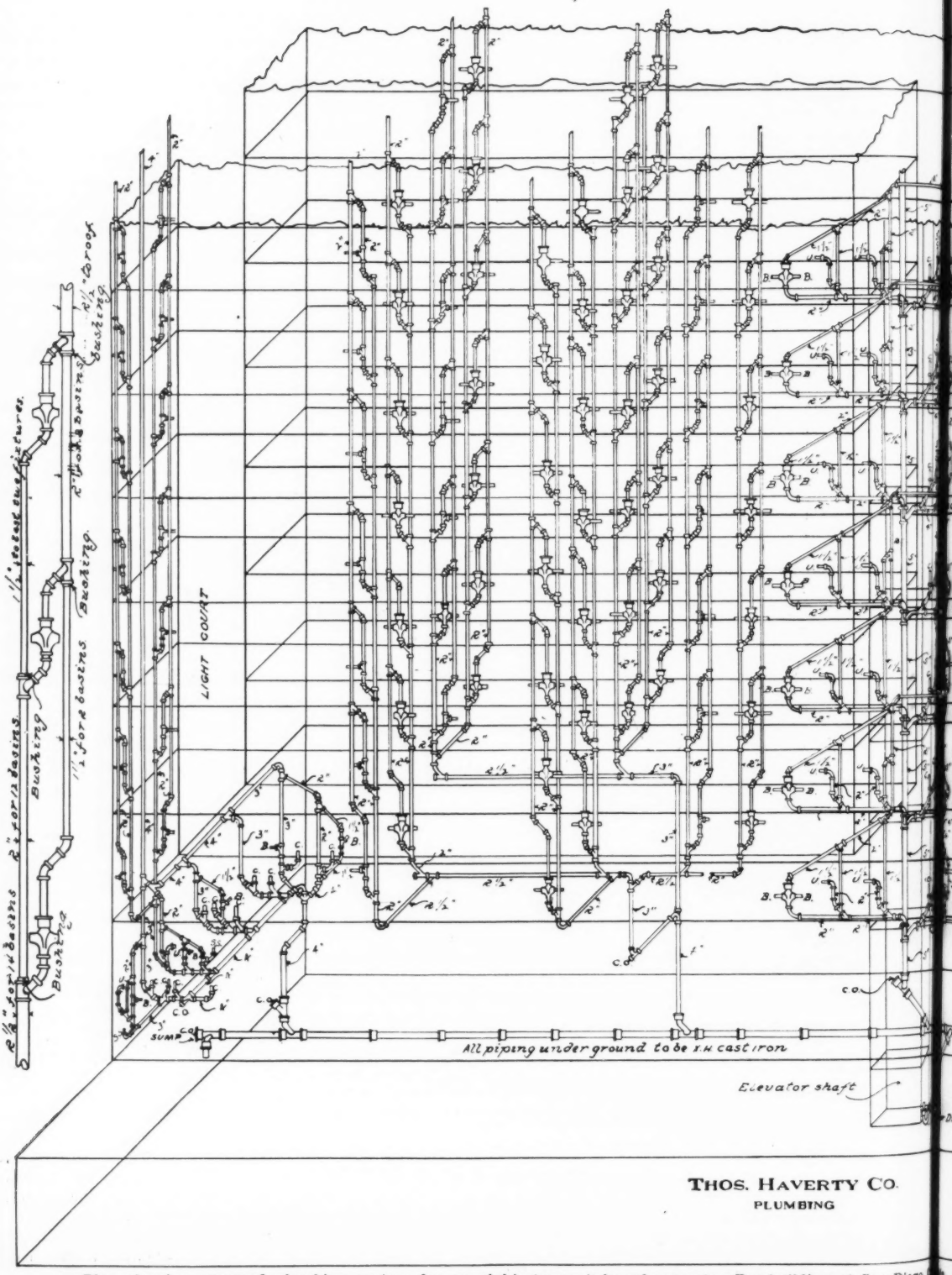
"Well, suppose you go out and make a few of them with the pump handle. I am in need of a pail of water right away."—Bohemian Magazine.

Proposed Lay-out for Plumbing in a Bathroom

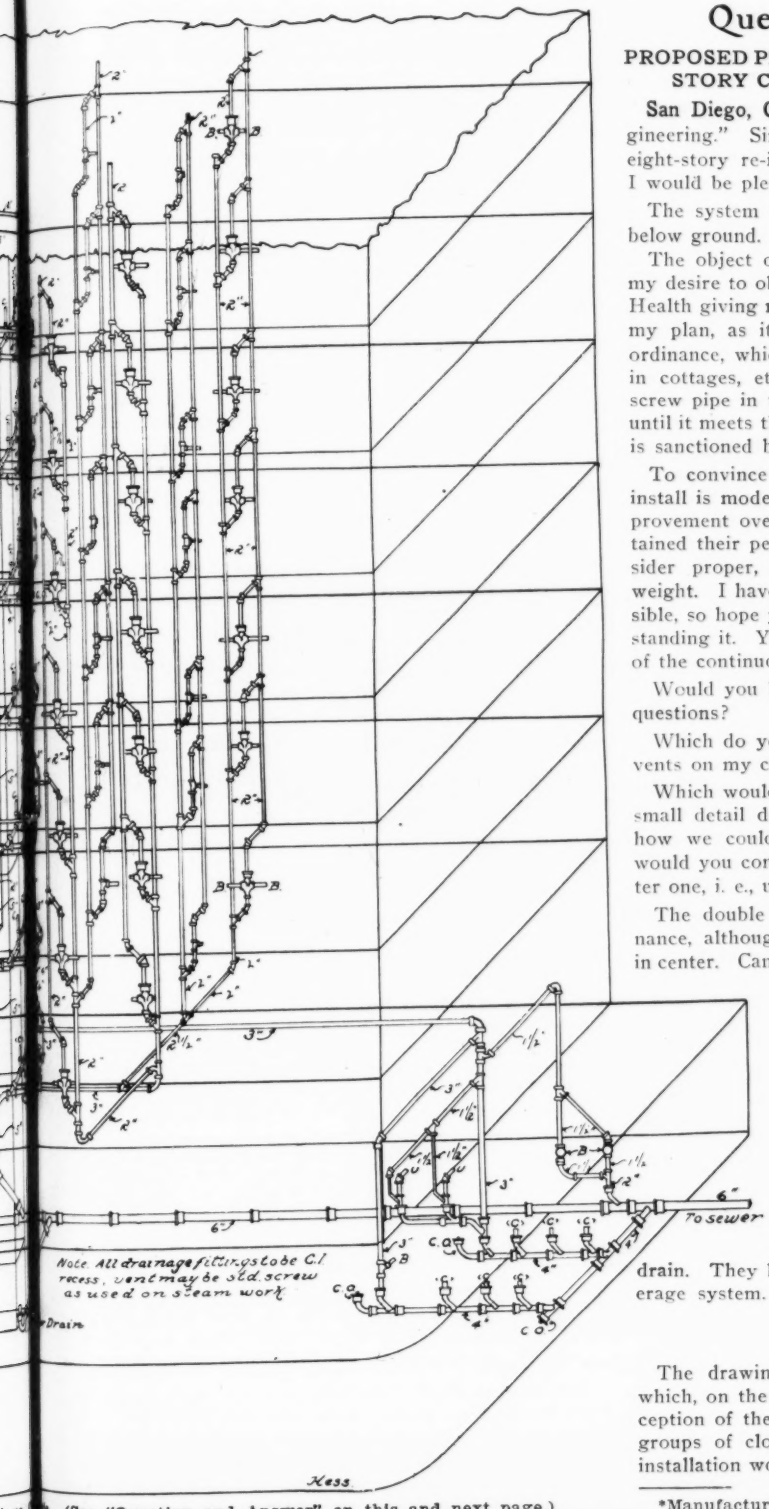
The sketch published herewith shows the suggested lay-out of plumbing in a bathroom as contemplated under the proposed Cleveland plumbing ordinance, which has been discussed so thoroughly during the past two years. The upper portion of the sketch shows the plan of the piping, while the lower portion shows the elevation. The dotted line shown in the lower portion of the drawing indicates what the run of waste and vent pipes would be on floors below the highest. In this lay-out it is designed that if traps are more than five feet and not more than ten feet from the stack or the vent pipe, an approved resealing or anti-syphon trap may be used. When the building has five or six floors the main vent should be increased to 2½ inches at the fourth floor branch. In case there are from seven to ten floors the main vent should be increased to 3 inches at the sixth floor branch and the soil vent to 5 inches. The bath tub wastes must discharge above the center line of the closet discharge pipe. We shall be glad to receive suggestions or criticisms from our readers in relation to the desirability of this plan.



Sketch showing layout of plumbing in a bathroom in accordance with the proposed plumbing ordinance for Cleveland, O.



Plan showing proposed plumbing system for an eight-story reinforced concrete office building at San Diego



(See "Question and Answer" on this and next page.)

Questions and Answers

PROPOSED PLUMBING SYSTEM FOR AN EIGHT-STORY CONCRETE OFFICE BUILDING.

San Diego, Calif.—To the Editor of "Domestic Engineering." Sir:—Herewith is a plumbing plan of an eight-story re-inforced concrete office building, which I would be pleased to have your candid opinion upon.

The system is to be the Durham, with X. H. C. I. below ground.

The object of asking you this favor is because it is my desire to obtain a special permit from the Board of Health giving me permission to install job as shown on my plan, as it is utterly impossible to abide by the ordinance, which was only drawn up for the plumbing in cottages, etc. We are the first firm to introduce screw pipe in this town, so do not wish to do a thing until it meets the approval of the proper authorities and is sanctioned by them.

To convince them thoroughly that what we wish to install is modern in every respect and is really an improvement over the work now being done, I have obtained their permission to write and see what you consider proper, and your judgment will carry great weight. I have tried to make the plan as clear as possible, so hope you will not have any difficulty in understanding it. You will readily see that I have made use of the continuous vent in both closet and basin lines.

Would you be kind enough to answer the following questions?

Which do you consider best, separate or continuous vents on my closet runs, arranged as shown?

Which would you recommend for my basin lines, the small detail drawn on the left side of plan, which is how we could do it according to the ordinance, or would you consider the system I have laid out the better one, i. e., using 2-inch waste and vents all through?

The double basin cross is also a violation of ordinance, although it is a Walker fitting* with partition in center. Can you recommend anything more direct or sanitary for two basins that set back to back?

The urinals, you will notice, are vented about 18 inches below seal, so as to give them a leg to draw on. We are using the Hydric jet urinal and find it a frost if vented near the crown, hence this method.

As we never have frost in this climate, we do not increase our vents coming through roof, nor are we allowed to use a house trap in our main drain. They have what they call the direct draft sewerage system. Yours respectfully, **George Hess,**
Care Thos. Haverty Company.

Answer.

The drawing gives a very fair idea of the work, which, on the whole, is well laid out, and, with the exception of the three-inch vent line from the two front groups of closets, there is nothing to criticize. The installation would be better if this vent stack were car-

*Manufactured by Frank Walker, of Los Angeles, Cal.

ried separately through the roof, thereby eliminating the long horizontal run required, as at present planned, to connect it to one of the other vent stacks in the building. The main drain is not trapped with a main drain trap, but that is not a point against the system. Indeed, if traps are not required in that city, then the system will be better without one, and will consequently be more sanitary.

Frost not penetrating as far south as San Diego, there is no occasion for increasing the lines of pipe where they pass through the roof; hence the work is perfectly sanitary, so far as the vent outlets are concerned, in any climate as mild as Southern California.

Taking up now the system of trap ventilation, we find that the continuous sytem has been employed. In the plan proper is shown the continuous vent system for venting tiers of basins, set back to back on the several floors. A sanitary cross used is of the Walker pattern, with interior partitions to deflect the flow downward. No better system than this could be devised for the purpose for which it is intended. Even without the Walker fittings with interior partitions, the work would be perfectly sanitary, embodying, as it does, perfect protection with the minimum cost. It seems from the detail drawing of basin stacks, to the left, that the local ordinance requires a 2½-inch pipe to take the discharge from 14 basins, and that the pipes are decreased in size in proportion to the number of fixtures they care for. Ordinarily the practice of reducing the size of pipes in proportion to the number of fixtures they are to care for is to be commended, but in this case reducing the vent stack provides a shoulder at each reducing fitting, which might catch rust scales or other foreign matter introduced into the pipe, thereby causing a stoppage and defeating the very object for which the pipe is introduced. Further, a 2½-inch pipe is entirely too large to take the discharge from 14 wash basins; consequently the interior would never be well scoured. A system of pipes of uniform size, such as shown in the drawings proper, will be found much better, for the reasons enumerated in the foregoing paragraphs.

Regarding the venting of water closets, the better method to employ will depend on whether washout closets are to be used, or some form of siphon or wash-down pattern. If washout closets are to be installed the back vent pipes ought to be connected as close as possible to the seal of the trap, to obviate a long inverted leg, which would be liable to cause the water to be siphoned from the trap. In that case a system of individual back vents would no doubt be the better to employ. If, on the other hand, a siphon jet, siphon wash-down or closets operated on the siphon principle are to be employed, a better siphonic action no doubt will be obtained by not having the back vent connected too near the seal of the trap. If closets of such types are to be used the continuous vents would probably be preferable, although equally satisfactory results can be obtained by the use of separate back vents.

Altogether the system shown on the plan looks workmanlike, and if installed according to the drawing will insure a sanitary installation.

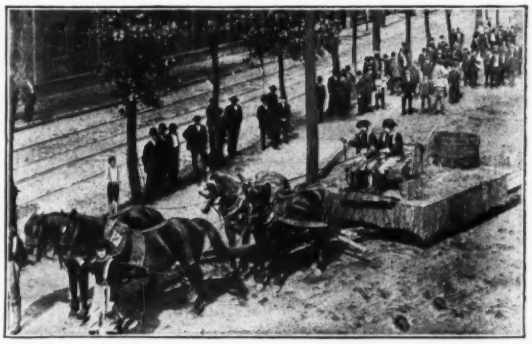
New York, N. Y.—C. E. Hoyt has engaged in the plumbing business at 737 East 156th street.

Wholesale Plumbing

The O'Malley Manufacturing Company's plant, at Scranton, Pa., was visited by fire on Friday, November 6, causing a loss of about $15,000. The company manufactures plumbing specialties.

The Scioto Valley Supply Company, one of the most progressive of the Columbus (O.) jobbing houses, had a special wire connected with their office the night of the election to receive the election returns. About twenty guests were invited to enjoy the comfort afforded for direct authentic returns. Nothing but good cigars were served.

Pearce & McCall have opened an attractive office at 140 West Forty-second street, New York, for the purpose of representing manufacturers of plumbing, heating and mill supply goods in New York and vicinity. They have been appointed selling agents for the Simplex Faucet Company, of Hyde Park, Mass.; J. R. Smith & Company, of Mechanicsville, N. Y., and Hayes & Guthrie, of Nutley, N. J., and are still open for a few more good accounts.



Standard Sanitary Manufacturing Company's float No. I in the recent sesqui-centennial parade at Pittsburg, Pa., showing washing and bathing equipment from the year 1758. On the forward end of the float is shown the old mill and windlass, while on the rear is the ancient bath-tub made of a cross section of a large tree. The float is covered with bark, and the men are dressed in the Colonial costumes of that time. The float with its "pendant" attracted probably more attention than any other two floats in the parade.

The Perth Amboy Pottery Works, of Perth Amboy, N. J., has been organized and incorporated with a capital of $100,000. The new company is controlled by the same interests as the Fords Terra Cotta and Pottery Works, of Fords, N. J., and 231 Pearl street, New York, and it purchased the plant of the Perth Amboy Ceramic Company at the recent receiver's sale, for the purpose of increasing its capacity in the manufacture of earthenware laundry trays, sinks, lavatories and other sanitary goods.

The case of W. H. Shilvock, of Chicago, who some time ago caused the arrest of John S. Kelly, western manager of the Central Foundry Company, of New York, and three officers of the plumbers' and gas fitters' unions in Chicago, came to a sudden end in Municipal Judge Gemmill's court on Friday afternoon, No-

vember 6, when the judge cut the proceedings short by declaring that he would not listen to another word from Shilvock or the assistant state's attorney, who was prosecuting the defendants. Shilvock accused Mr. Kelly and three officers of the above-mentioned unions of conspiracy to injure his business by preventing union men from handling plumbing specialties of his manufacture. It was shown that Judge Kohlsaat, of the United States court, had issued an injunction restraining Shilvock from using some of the devices in question, as they were protected by patents owned by the Central Foundry Company. In dismissing the case the court said: "This man has been committing a general fraud against the public. He has not produced a scintilla of evidence that he has any business or that he ever had. He admits on the witness stand that he made use of patents on which a royalty is due other men. I will not hear another word from him. The defendants are dismissed."

SAN FRANCISCO MASTER PLUMBERS ADDRESS MANUFACTURERS OF SANITARY ENAMELED WARE.

So large a proportion of plumbers' enameled cast-iron fixtures are received in damaged condition at San Francisco, Cal., and the evil has of late assumed such proportions that the Master Plumbers' Association in that city has deemed it advisable to call attention to the matter, wherefore it has had its board of directors prepare the following letter, which will soon be sent to the manufacturers and wholesalers of plumbers' enameled goods in the United States. The letter is in full as follows:

"The many admirable qualities of well designed and honestly made plumbers' enameled cast-iron and steel fixtures have been and are highly appreciated by both the master plumbers and the public; and in recognition of these qualities the master plumber has recommended and introduced these enameled goods in preference to many other classes of fixtures.

"But, notwithstanding the rapid advance and improvement made in this class of enameled goods, the master plumber finds that the volume of deceptive, imperfect and damaged goods increases, and now far exceeds that which he believes it should be; and the master plumber believes that if the evil were given due consideration, strong correctives would be found, and ought to be applied.

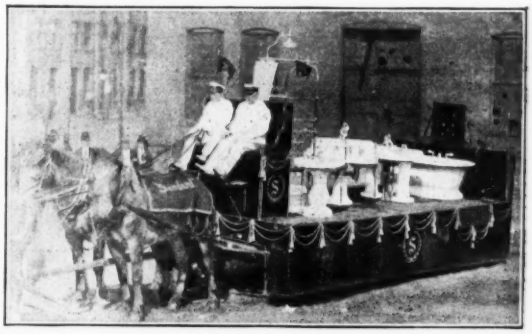
"We have strong reasons to believe, and we do believe, **that this city and California in general, is looked upon by Eastern manufacturers and wholesalers as being a good field upon which to "dump" inferior articles;** be that as it may, we know that in your line of goods, and in others, large quantities of inferior goods are shipped to us.

"The legitimate master plumber wishes to eliminate inferior goods and to buy and install only the superior, but he finds that even when he is relieved of liability of accepting and paying—which too often is not the case—that he yet suffers by the fact that the rejected and imperfect goods are marketed through illegitimate, irresponsible channels; and that he is eventually brought against this depressing class of competition.

"Were these evils of small and diminishing proportions, then they were of no great moment, but such is not the case; they are growing, and rapidly, and have become of magnitude.

"We would point to the fact that it has been the good qualities of plumbers' enameled ware which have been its greatest advertisers, and we would also point out that it has now become so that the bad qualities of deceptive, imperfect and damaged goods have become strong contra-advertisers; in other words, **they are giving enameled goods 'a black eye'.**

"There are now prominent master plumbers who decline to accept the responsibilities, and who will not recommend enameled goods, indeed, who will condemn them. This is a matter of more than ordinary moment, we assure you.



Standard Sanitary Manufacturing Company's float No. II in the recent sesqui-centennial parade at Pittsburg, Pa., showing modern bathroom equipment of 1908. On this float, shower bath-tubs, lavatories and water closets of the latest pattern and manufacture were shown in contrast with those on the 1758 float, which preceded it.

"We believe that wise manufacturers and wholesalers earnestly desire to eliminate inferiority and to maintain excellence. But to us, it appears that there is no good reason why such a large percentage of goods, originally excellent, should be delivered here damaged to such a degree as to render them properly unsalable.

"The percentage of damage to enameled fixtures during transportation is extravagant; it has been asserted that as many as three hundred sinks to a carload were heavily damaged in transport.

"It appears to us, that since the railroad companies use specially built cars for the transportation of fruits, wagons and furniture, and many other special commodities, that now the transportation of plumbing fixtures has reached such large and growing proportions, that if the manufacturers and wholesalers went into this question deeply, very much betterment would result.

"We believe, also, that if the question of 'packing for shipment' were intelligently taken up with competent professional packers, that the evil of damage in transport would be greatly eliminated.

"We especially desire to impress upon the manufacturers and wholesalers that **this address is not framed in a sentiment of impertinence or of dictation, but solely from the desire to present serious trade conditions earnestly and truthfully in the hopes that remedies will be found and applied."**

New High Records Made in Building Construction.

Building construction is now making new high records. The big cities show a marked increase in operations, whereas a few months ago they were falling behind. During October permits were taken out in thirty-six cities for the construction of 9,792 buildings, involving a total estimated cost of $43,074,775, against 9,157, aggregating $31,736,855 for the corresponding month a year ago, a gain of 635 buildings and $11,337,920, or 36 per cent. The most interesting feature of the present situation is the fact that the larger cities have recovered entirely from the depression which was so marked in several instances, notably the east, and are now plunging ahead beyond what would be expected in a normal condition of things. The figures in detail are as follows:

	1908		1907	
	Bldgs.	Est. cost.	Bldgs.	Est. cost.
*New York	264	$15,341,970	206	$ 7,210,025
Brooklyn	1,046	5,654,215	548	4,603,660
Chicago	980	6,242,315	900	4,960,150
Philadelphia	1,274	2,789,295	1,184	1,763,905
Detroit	376	1,139,820	381	1,202,150
Minneapolis	544	990,390	464	927,115
Pittsburg	266	969,862	334	708,641
Denver	307	957,400	258	578,810
Portland	368	829,750	422	645,585
St. Paul	332	711,610	275	1,013,322
Grand Rapids	103	679,670	139	333,872
Buffalo	270	643,000	270	631,000
Newark	202	602,121	235	726,695
Spokane	258	575,407	222	596,585
Rochester	221	572,967	...	420,435
Omaha	119	517,875	133	500,543
Indianapolis	374	499,870	383	479,515
Cincinnati	343	425,095	302	1,028,830
Columbus	140	305,555	207	399,460
Worcester	156	361,435	113	277,717
Memphis	198	290,118	268	281,839
Louisville	244	254,695	253	291,715
Atlanta	394	246,577	454	228,288
Toledo	102	199,465	89	403,370
Birmingham	110	170,693	167	177,363
Lincoln	58	130,200	72	106,845
Mobile	33	125,250	39	41,689
Stockton	20	121,900	43	228,625
Tacoma	163	145,899	218	203,604
Des Moines	40	112,950	39	77,745
Chattanooga	218	67,380	269	120,770
Terre Haute	62	65,170	88	276,060
Davenport	21	44,100	12	25,205
Pueblo	17	19,285	14	17,800
Dallas	132	208,265	77	136,687
Fort Worth	31	63,200	79	111,235
Totals	9,792	$43,074,775	9,157	$31,736,855

Out of thirty-six cities twenty-two show in some instances remarkable increases. It is gratifying to note the heavy increase in New York City, permits having been taken out during the month just closed for 264 buildings, involving a total estimated cost of $15,341,970, against 206 buildings, $7,210,025 for the corresponding month a year ago, an increase of 112 per cent. Brooklyn also makes a satisfactory showing, with an increase of 22 per cent.

Philadelphia received a severe blow by the financial flurry a year ago and was slow to recover, but now has a satisfactory increase of 59 per cent. Pittsburg, which, it seemed for a little while, was on the retired list of the cities showing gains, is now repeating her former record, the increase amounting to 36 per cent. Chicago is more than holding her own, the record for the month just closed being 980 permits, involving $6,242,315, against 900 permits at an aggregate estimated cost of $4,960,150 for the corresponding month a year ago, an increase of 25 per cent.

Other notable increases are Denver, 65 per cent, and Portland, 28. A number of smaller cities make wonderful records, but their buildings are of a character which, when a permit is taken out of any unusual magnitude, it makes a remarkable showing in the way of percentage. For illustration, Mobile has an increase of 200 per cent, Grand Rapids, Mich, 103, Davenport, 75, Des Moines 46, Rochester 36, and Worcester, Mass., 30.

*Including Manhattan and Bronx.

Wholesale Heating

The Boynton Furnace Company, of New York City and Chicago, has been incorporated, with a capital of $400,000. The incorporators are: Wells S. Dickinson, Charles M. Benedict and Henry H. Abbott.

Edwin R. Stoughton, who for a number of years has been connected with the sale of heating apparatus, has been appointed assistant general sales manager of the United States Heater Company, of Detroit, Mich.

The Best Manufacturing Company, of Pittsburg, Pa., has been consolidated with the Crane Company, of Chicago, under the name of **the Crane-Best Company of Pittsburg,** and a new plant will be built at Oakland, Pittsburg, on a site which was purchased some time ago and which will be turned over to the new concern. The Crane-Best Company will act as the eastern branch of the Crane Company of Chicago.

The McRae & Roberts Manufacturing Company, of Detroit, Mich., has just changed front, and genial Captain McRae is president. Milton A. McRae, for many years president and general manager of the Scripps-McRae league of daily papers, is vice-president and R. J. Service, secretary-treasurer. Mr. Service is well known as one of the ablest men in Detroit, a gentleman and scholar of high standing, and will help push this concern to the front as one of the largest manufacturers of brass goods for steam, water and gas in this country.

Members of the American Society of Heating and Ventilating Engineers have just received the announcement that the fifteenth annual meeting of the society will be held January 19, 20 and 21, 1909, in the Engineering Societies building, 29 West Thirty-ninth street, New York City. They are invited to prepare papers and suggest topics for discussion, and they are requested to see that such matter reaches the secretary, W. M. Mackay, 113 Beekman street, New York, early in December, to facilitate the arrangement of the program. The announcement is accompanied by two letters. One is from Professor Wm. Kent, chairman of

the committee on standards, asking for suggestions and containing the following question: "What rule do you use to ascertain the relative heating values of heating surface of different types of radiators, such as the standard tube types, the plain cast iron section types, the extended surface types, such as the Gold Pin radiator, etc.; also what rule have you to determine the ratios to use in direct-indirect, indirect and forced draft systems?" The other letter is from Prof. J. D. Hoffman, chairman of the committee on tests, asking for fresh data that has not hitherto been up for discussion.

Metal Market

New York Metal Market, November 10.

Copper, Prime Lake	$14.62½
Copper, Lake, Arsenical brands	14.62½
Copper, Electrolytic	14.50
Antimony, Cookson's	8.25
Lead	4.45
Spelter	5.05
Straits Tin	31.10

Chicago Iron Market, November 12.

Southern, No. 2 Foundry	$16.85-17.35
Lake Superior Charcoal	19.50-20.00
Lake Superior Coke Iron, No. 2 Foundry	16.50-17.00

November 12, 1908:

Foundry iron was the same price as week previous
$5 less per ton than the year previous
Copper was 1¼c more a lb. than the month previous
¼c more a lb. than the year previous

Cleveland, O.—Heavy buying of pig-iron, with some advances in prices, have been the leading feature of the market, says "The Iron Trade Review." Although the improvement in conditions, so far as actual transactions are concerned, has been felt principally in pig-iron, the general tone of the market is much better. There is a strong conservative influence being exerted against piling up orders too rapidly, or advancing prices too suddenly, as it is felt that caution is necessary to prevent reaction.

New York, N. Y.—"We have sold all the copper we dare to sell at any one time," said an officer of one of the big agencies. "In other words, we are sold out of electrolytic up to February 1. There is plenty of business if we had the metal, but we have contracted for all we have above the ground. I do not believe a pound is being bought for speculative purposes. Manufacturers are placing orders only against contracts on hand. We know this because a customer will buy 500,000 pounds in the morning and call up in the afternoon for half a million more. Electrolytic is considered cheap at 14⅜. The boom seems to be backed by substantial arguments and points to 15-cent copper by the end of the month. Stocks of metal are practically nothing. At the present rate, consumption will quickly outstrip production."

A Sense of Security.

"Weren't you worried about the members of your family during their long absence from home?"

"Not at all. I don't own an automobile and none of them think they can swim or sail a boat."

Steam and Mill Supplies

The cartoon of one of the most enterprising young men of the South, which is reproduced herewith from the "Savannah Morning News," speaks for itself. In this caricature of George V. Denny, vice-president of the Georgia Supply Co., Savannah, you will notice that he is in the act of loading machinery and mill supplies upon a vessel bound for Cuba. Mr. Denny has returned from the "Pearl of the Antilles," and evidently sees the wonderful opening for trade in that land. Indeed the entire South is awakening to the fact that a golden opportunity is in store for those enterprising enough to

GEORGE V. DENNY
Vice-President of the Georgia Supply Company, Savannah, Ga.

lay immediate plans for capturing the business of the Spanish-speaking nations south of us. The canal will probably be completed by 1912, and lines of boats will be running direct to those countries from every Southern port. The cities of the entire South having facilities for shipping by water, will boom, and an added opportunity will be afforded them as to increase in trade and population, as never before in their history. That is right, George, nothing like being among the first in the field, and here is success to you.

The Fort Wayne Oil and Supply Company, of Fort Wayne, Ind., on last Monday and Tuesday celebrated the opening of its new store in a way which is bound to bring good results to this enterprising concern. Invitations had been sent out to the customers of the

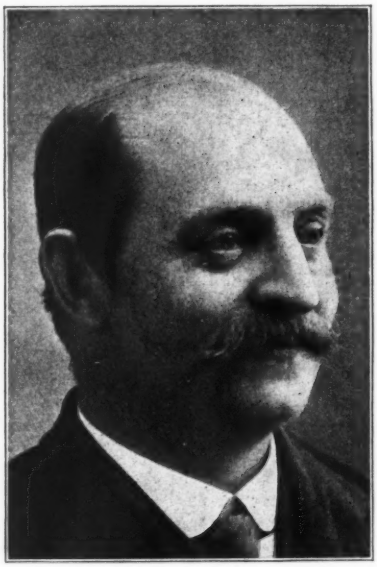
company, and quite a large number availed themselves of the opportunity to get acquainted with the lines carried by the company, and this was done under the most propitious conditions, representatives of more than fifteen factories being present, doing some good missionary work in an unobtrusive way, which was greatly appreciated by all who attended the affair. The event seemed such a pleasant success that it deserves to be emulated by others.

Association News

New York, N. Y.—The annual entertainment and reception of the Manhattan branch of the New York City Association of Master Plumbers will be held on Wednesday evening, December 9, 1908, at the Lexington opera house. It is going to be the event of the season. Some of the best vaudeville artists in the city have been booked for the occasion, and, as the committee puts it, "They're going to make a home run this time for fair, and it's going to be counted, too, because they are going to touch all the bases, including the second. The tickets will cost you $2 per copy, net, but you're compelled to bring as many ladies as you can." The committee in charge of the arrangements is composed of Tea Aye Hill, chairman; Eye Jay Brown, treasurer; Tea Ess Cochrane, Jr., secretary; Tea Jay Tuomey, sergeant-at-arms; Jay Ell Knight, Jay Schwartz, Bee Eff Donohoe, Aitch Aye Treat, Tea Jay Cummins, Jay Smith and Jay Pea Knight.

San Francisco, Cal.—The Association of Master Plumbers of this city has taken up a line of work that is proving of vast interest to the members, as well as occasioning considerable surprise, as the study, even at the commencement, has brought many new ideas into the minds of those who have taken it up. It is a well known fact that San Francisco Master Plumbers at the present time and for some time past have figured closer on their work than is the rule in most other localities, and this condition of affairs appears to have grown chronic. The study referred to, which is being taken up at the regular association meetings, is for the purpose of **enlightening members as to methods of arriving at true cost**, and to enable them to reach some understanding as to the percentage that should be added to the figured cost of a job to enable them to realize a fair profit for themselves after general expense has been considered. It is asserted that at the present time there are many master plumbers in San Francisco conducting establishments of their own who are finding at the end of the year that their profits are less than the journeyman plumber's in their employ. To get work, however, they feel that they must figure low, and the result is that the smaller class of work, especially, is done at a ruinous figure. This has caused many plumbers to cease attemping to work up an extensive business and they are conducting small establishments and are doing much of the work themselves, for by this means they can afford to figure at a rate that will net them the regular journeyman's wages and a little more and still be able to take the contract from the legitimate contractor. These matters are receiving much attention at the present time from the local association, and with the aid of blackboards in the meeting hall some very interesting examples are demonstrated to the members. It was discovered that not one-half of them were able to figure with any degree of accuracy the **cost of conducting their business**, and with most of them this was scarcely recognized in figuring **contracts.**

Who's Who in Britain—VI



Edward Ellis Burns, born in Hamilton, Lanarkshire, England, in 1860, was for eleven years a plumber with the Caledonian Railway Company at Glasgow, and in 1891-1902 was a sanitary inspector for the Lower Ward of his native country. In 1902 he became General Secretary of the United Operative Plumbers' Association. Mr. Burns is Honorary Secretary of the Advisory Committee on Plumbing, which is composed of representatives from the Board of Education, the City and Guilds of London Institute, the Worshipful Company of Plumbers, the National Association of Master Plumbers, and the United Operative Plumbers' Association, and whose duty is to advise educational authorities in regard to plumbing classes.

Plumbing Inspection

Washington, D. C.—It is rumored that the gas fitting regulations of the District of Columbia will be amended to cover a certain constructive portion of hot water heaters (gas), inspection of the installation and maintenance. This action will be the result of the killing of three persons during the last week by carbon monoxide, which is given off by the incomplete combustion of illuminating gas. The accident was caused supposedly by an upright tubular gas water heater, which had no flue to carry the poisonous gas generated to the outer air. In a statement issued by Dr. John Haywood, of the United States Bureau of Chemistry, which has the matter under investigation, he says in part: "Carbon monoxide is caused by incomplete combustion around a gas burner. It has no odor. * * * Carbon monoxide kills quickly." This is probably the

first case of poisoning of this kind in the city, although there have been a great many asphyxiation cases.

Pensacola, Fla.—D. P. Hapgood has just been chosen by the city council as plumbing inspector of the city at a salary of $150 a month. He will take office on December 1, and he will have the distinction of being the first plumbing inspector of Pensacola, the office having recently been created, and to him will fall the work of watching over the connections to be made to the new sewer system which is just being completed. There were eight applicants for the position, but the successful applicant received three-fourths of the votes cast.

Obituary

Earl V. D. Haskell, who conducted a plumbing business at 116 Courtland avenue, Atlanta, Ga., passed on at Wesley Memorial hospital in that city on Sunday morning, November 1, in his forty-sixth year. Mr. Haskell was not only a successful plumber, but a man of wide sympathies and devoted much of his time and means to the relief of suffering among dumb animals. He was quite an Indian scholar, having acquired several Indian dialects in his younger days, when he acted as teacher at an Indian school in the west. He belonged to several fraternal organizations, and he is survived by his wife and a sister.

Dr. Azel Ames, of Wakefield, Mass., one of the foremost authorities on scientific sanitation, passed on last Thursday, November 12, at the Danvers hospital, where he had been under treatment for some time past. He was 63 years of age, having been born in Chelsea, August 16, 1845. He was a graduate of Phillips Andover Academy and Harvard Medical school, the latter in 1871. Dr. Ames was author of the famous Wakefield code of sanitary regulations which is in wide use, and he wrote many books on that and allied subjects. He was also author of "The Mayflower and Its Log." He was a member of the Massachusetts State Drainage Commission and was twice sent as a representative of the United States Government to international sanitary conferences. He also rendered great and effective service for many years as secretary of the American Public Health Association. While a member of the State Legislature in 1878 he was secretary of the Committee on Public Health. He gave up the practice of medicine for the sanitary profession and gave practically all of his time to that work. He was engaged to draw up the health and sanitary regulations for many large cities. He was one of Wakefield's foremost citizens, was founder of the water company, of the board of health, and took an active interest in the affairs of the town. He served in the civil war and carried General Grant in his arms from the battle grounds at Charleston to the hospital after the general's wounding. Dr. Ames leaves a wife, two sons, Azel Ames, Jr., of New York, and Edward Winslow Ames, of Buenos Ayres; and a daughter, Miss Louise K. Ames, of Wakefield.

Waterloo, Iowa.—Ellis & Foster have secured the contract for the plumbing work in the new Turkish Baths in the Syndicate building, and also the contract for the remodeling of the plumbing in the Y. M. C. A. building.

Keokuk, Iowa.—The King Plumbing Company, of this city, has secured the contract for the heating of the new school building. The contract amounts to $5,486.

Who's Who in America—II

Joseph R. Whalen, president of the California Plumbing Supply Company, 658 Seventh street, San Francisco, Cal., was born at Cascades, Oregon, on March 17, 1861, went to country school while from 6 to 10 years of age, and attended St. Michael's college at Portland, Oregon, from 1871 to 1875. In 1876 he entered the employ of the Oregon Railway & Navigation Company in its machine shops at Dalles, Ore., became fireman on that company's road in '77, advanced to engineer in '79, serving in that capacity for five years. Thereafter followed a year of travel and study partly in this country and partly in Europe. The next five years were spent in the retail stove business at Portland, Ore., in which he opened up the far west territory for the Michigan Stove Company. The following decade was spent in the same territory, partly with the N. O. Nelson Mfg. Co. and partly with the Cahill-Swift Manufacturing Company, both of St. Louis, Mo. In 1901 he opened the San Francisco branch of the Haines, Jones & Cadbury Company, remaining its manager until March, 1908, when he organized the California Plumbing Supply Company and became its president and manager. Mr. Whalen's name is linked almost inseparably with those of Frank Merwin, of "Cooper" fame, and Alex Buchman, of "Glauber" fame, with whom he traveled on the road for many years. He fought many battles with both of these gentlemen in those bygone days. He won several fights and had two "draws" with Merwin, one he lost because Mr. Merwin fell on him in the battle and refused to roll over.

Personal

M. W. Manwaring, a prominent master plumber of Bridgeport, Conn., was elected state senator from the Twenty-third district of Connecticut at the recent election.

H. F. Weaver, secretary of the Peerless Selling Company, of Evansville, Ind., left this week on a trip to the cities on the Pacific coast. He expects to be gone about one month.

Geo. M. Davis, president of the G. M. Davis Regulator Company, of Chicago, is reported seriously ill at Morrow, Tex., having suffered two paralytic strokes. He went to Texas about ten days ago and was then apparently enjoying his usual health.

Theodore Courtright, of the Armstrong Manufacturing Company, of Bridgeport, Conn., was in Chicago last week calling on some of his many old-time friends in the trade and adding some new ones to his large list. He was shown the new sights around town by H. S. Laing, manager of the Chicago branch of the Armstrong Manufacturing Company.

Louis G. Gutzeit is plumbing inspector at San Antonio, Tex., and he seems to be so conscientious an official that he is entitled to honorable mention. He recently had occasion to condemn some plumbing work which his own brother had done, and when he failed to remedy the defects within the specified time he was arrested at the plumbing inspector's request, all in accordance with the ordinance of the city.

Notes from the West

Des Moines, Iowa.—The McCawley Plumbing Company has secured the contract for the installation of a heating system in the new Church of Christ. The consideration is $7,390.

Des Moines, Iowa.—The Des Moines Plumbing and Heating Company has secured the contract for the plumbing and heating in James Brenton's new residence at Dallas Center, Iowa. The consideration is $1,000.

St. Joseph, Mo.—The Byrne-Powers Plumbing Company has been awarded the contract for the plumbing in the eight-room addition to the new McKinley school, for $2,578, and the C. F. Rick Plumbing and Heating Company will install the heating system, for $5,100.

The Great Northwest

Milwaukee, Wis.—Downey & Kruse has secured the contract for the installation of a heating system in the Auditorium building. The consideration is $6,300.

Fond du Lac, Wis.—The Ahearn-McCoy Company has just laid the foundation for a new building on East First street, which, when completed, will be occupied by its plumbing and heating establishment.

Milwaukee, Wis.—The W. A. Bowers Heating Company, of this city, has been awarded the contract for the construction of a central hot water heating system for forty-four buildings at the western branch, National Home of Disabled Volunteer Soldiers, at Leavenworth, Kan.

Appleton, Wis.—The W. S. Patterson Company has been awarded the contract for the hot water heating and ventilating systems for the remodeled Congregational church at Appleton; price, $2,000.

Milwaukee, Wis.—The plumbing contract on the $75,000 residence to be erected for Albert O. Trostel, the millionaire Milwaukee tanner, has been awarded to W. H. Halsey, of Milwaukee, president of the National Association of Master Plumbers. The contract is one of the largest residence jobs ever awarded in Milwaukee and it is considered a great compliment to Mr. Halsey to be awarded the work.

New Jersey

Riveredge, N. J.—H. M. Taylor has opened a plumbing and heating establishment here. He would like to receive catalogues from manufacturers and jobbers in these lines.

Collingswood, N. J.—Stetzer & Townsend are engaged in plumbing the operation of thirty-six houses at the corner of Roney and Haddon avenues, and ten houses on New Jersey avenue and ten on the city line.

Haddenfield, N. J.—Eisle & Manning are just completing the plumbing in the new high school, with the most modern fixtures, having installed 27 water closets and nine urinal stalls. They are at present figuring on the steam heating of the school. This firm is also installing the plumbing and heating in fifteen houses for Wm. S. Caper, of Haddonfield.

Southern Notes

Washington, D. C.—Sealed proposals will be received at the office of the supervising architect until 3 o'clock p. m., December 8, 1908, and then opened, for the construction (complete) of the United States postoffice at Gainesville, Ga., in accordance with the drawings and specifications.

Washington, D. C.—A site for the Shepherd statue has just been decided upon, and work on the foundation will be commenced at once. The site selected is in the reservation in front of the new Municipal building. This statue is in honor of the late Alexander R. Shepherd, former governor of the District of Columbia, who started that comprehensive plan of improvements which has made this city, in the opinion of Englishmen, Frenchmen, Germans and others familiar with the most splendid of Europe's capitals, the most delightful residence city in the world. Shepherd could say of Washington, with as great truth as Augustus said of Rome: "I found it a city of clay and brick, and I left it a city of marble." After having rendered such invaluable service to this city and being rewarded only with abuse, Shepherd went to Mexico in 1879 and remained there to the time of his death, which occurred in 1902. He developed valuable mines in Mexico and died a multimillionaire.

J. Wiot's plumbing establishment at 2007 Madison road, Cincinnati, O., has become quite famous as the voting place where President-elect Taft cast his ballot at the recent election.

New York News

Rochester, N. Y.—J. B. Zimmerman, formerly of 385 Ames street, has recently moved into larger and more spacious quarters at 645 Maple street.

Rochester, N. Y.—Robert J. Howard, of West Main street, has under way at present the plumbing work in approximately twenty new residences in this city.

East Rochester, N. Y.—Chas. Derby is installing the plumbing and heating in the new school building, also in the new Episcopal parish house at Batavia, N. Y.

Avon, N. Y.—H. T. Siebert has secured a $3,000 contract for the heating and plumbing in the St. Agnes school. In addition to this he has the contracts for heating and plumbing in two new houses.

Skaneateles, N. Y.—Shotwell, Tucker & McGinn Company has recently completed an unusually attractive contract in that of a plumbing and heating installation for Oakwood Seminary, at Union Springs, N. Y.

Charlotte, N. Y.—A. Ferguson has recently completed an excellent installation of plumbing and heating work in the new school building here. In addition to this contract he has on his books a good assortment of other work.

Honeoye Falls, N. Y.—L. E. Gates has just closed a number of good contracts, among which is an $800 installation of plumbing and heating work for H. Billinger at East Bloomfield. He also has a number of similar contracts in Honeoye Falls.

Rochester, N. Y.—Louis Geimer, who but recently engaged in the plumbing business at 269 Joseph avenue, has had a most flourishing year thus far. At present he is placing the plumbing in six new residences in various sections of the city.

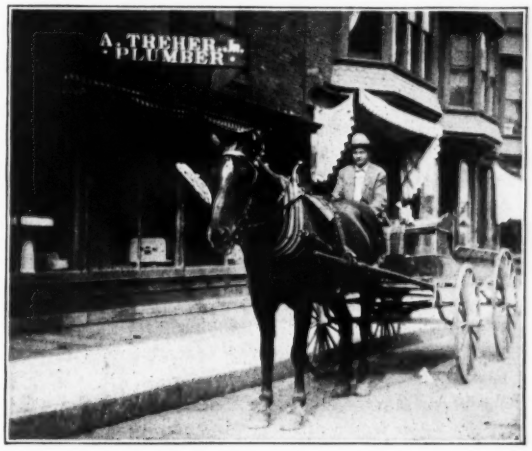
Rochester, N. Y.—F. G. Rossney, of 198 West avenue, continues business at the old stand, and when there always has a welcome hand for visiting strangers. He has on his books at present contracts for plumbing installations in approximately fifteen new residences in various sections of the city.

Rochester, N. Y.—John W. Connolly, of 929 Clinton avenue, S., is enjoying his usual quota of prosperity these days. His shop continues to run with its full complement of men. The most recent additions to his present list of work are contracts for the plumbing in a four-family flat building on Henrietta avenue and for a similar structure on South Clinton avenue.

Rochester, N. Y.—His many friends were deeply grieved to hear of the nearly fatal accident which befell W. J. Brown, of 43 Prospect street, the past week. While in his wagon he was struck by a passing automobile and in the collision was dashed back into the vehicle. A speedy recovery is hoped for. Mr. Brown has been in the plumbing business too long, however, to allow such mishaps to mar his even tenor of thought.

Rochester, N. Y.—The Dumond-Van Curan Co. is the name of a new concern to engage in the plumbing and heating business at 680 East avenue. The business was formerly conducted at that address by Van Curan & Bengel. Their establishment will be handsomely equipped and in it will be on display a modern assortment of fixtures. They would appreciate receiving catalogues and price lists from manufacturers and jobbers of plumbing and heating goods.

Rochester, N. Y.—W. J. Kerwin, of 155 East avenue, is looked upon as one of the successful members of the business in this city. To partly verify such a statement one has but to stroll up the named avenue and to gaze upon the new brick building being erected by Mr. Kerwin, adjoining his present quarters. A portion of this structure when completed will be occupied by his plumbing and heating business. A modern display of fixtures will be installed.

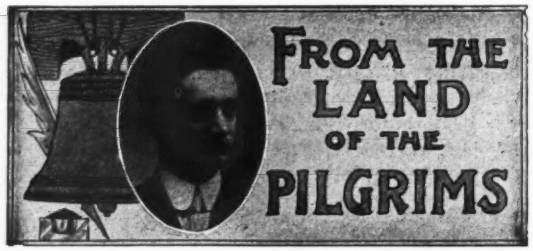


"An Early Start." Archie Treher, Jr., is an influential master plumber of Gloversville, N. Y., and his shop in that city is modern in its equipment. Photograph by our Mr. Winslow.

Medina, N. Y.—Curtis & Wilson have succeeded to the extensive business of Acer & Whedon, who have actively conducted a large hardware and plumbing establishment here for the past forty-four years. Mr. Wilson, who has now assumed active management of the mechanical department of the business, brings with him to his new post a world of valuable experience in his respective line. For over ten years he has been associated with the supply firm of W. A. Case & Son, at Buffalo, N. Y. He would be glad to have catalogues and price lists from manufacturers and jobbers of plumbing and heating material.

Jamaica, N. Y.—Engeldrum & Hoehlein is the style of a new firm in the plumbing and heating business in this city. Both John M. Engeldrum and Joseph Hoehlein, who compose the firm, have a wide acquaintance in local trade circles, and according to present indications their success is assured. They have fitted up modernly equipped quarters at 477A Fulton street, and are keeping a complement of mechanics busy day and night. They are at present engaged with a number of plumbing and heating contracts in Jamaica, a plumbing and heating installation in Far Rockaway and a residence at Hemstead, besides a good share of local jobbing work.

E. De Forest Winslow.



Weir, Mass.—Frank White and Bert Cummings will soon open a plumbing establishment on Somerset avenue.

Ludlow, Vt.—J. W. Archibald has given the contract for installing a new heating plant in his store to B. F. Whelden.

Strafford, Vt.—The Elizabeth Company, which has a big plant here, is to build 25 frame dwellings for its operatives.

Bridgeport, Conn.—J. Brady will do the plumbing in the new factory which Andrew Krouse & Company are soon to erect.

Stonington, Conn.—The contract for the new heating apparatus for the Ninigret Mill has been let to Allan Reed, of Providence.

Noank, Conn.—The new plumbing firm of Mull & Macdonald has already received several contracts and is buying heavily in supplies.

Westford, Mass.—James Spinner has given the contract for a hot water plant at his home to Thomas H. Murphy, of North Chelmsford.

Middlebury, Vt.—A. Calhoun & Sons have a large contract for plumbing at Proctorsville and have practically their entire force at work there.

Chelsea, Mass.—Samuel R. Gordon and Harry N. Gordon, conducting the Chelsea Hardware and Plumbing Co., are now located at 204 Broadway.

Boston, Mass.—A. C. Chisholm is to build eleven three-apartment houses on Lawrence road, Matapan district. He will let contracts personally.

Nashua, N. H.—Albert M. Rand has purchased the hardware and plumbing business of C. J. Gould at Plymouth and will make his home in that town in the future.

New Haven, Conn.—Sub-contracts for the new $20,000 residence of C. E. Cooksey are being let by the David H. Clark Company, who have the general contract.

New Haven, Conn.—James E. Todd has the contract for a $30,000 residence for Pierpont B. Foster, of 225 Bishop street. The sub-contracts have not yet been awarded.

Hartford, Conn.—Bids have been received for plumbing, heating and other work for the new engine house to be located on Fairfield avenue. The list of bidders has not yet been announced.

Lowell, Mass.—Desmarais & Bourrot have the contract for plumbing in the new house which is being erected at 35 Essex street. The firm also has a contract for plumbing and gas piping for Jaques Boysvert at the corner of Essex and Hildrith streets.

Waterbury, Conn.—Bids will be opened on November 27 for plumbing, heating and other work in connection with the new club house of the Waterbury lodge of Elks. All contracts will be let separately.

Lowell, Mass.—The plumbing establishment of Carroll Brothers on Middle street has been modernized by the installation of plate glass windows which replace the small panes that have been in use for many years.

Chelsea, Mass.—The board of control has received bids for plumbing the two-way fire station, as follows: T. F. Garvey, $1,597; Daniel E. Walsh, $1,590; Robert F. Brown, $1,574; A. L. Ruggles, $1,485; Pierce & Cox, $1,446; Tucker Co., $1,425. The contract has not yet been placed.

Bristol, Conn.—Adams & Arnold have the contract for installing two heaters in the South Side school building. They are also putting a heater in the residence of Sarah Bradley at Whigville and have the contract for installing a steam heater in the residence of John Seymour at Plainville.

New London, Conn.—The fire commissioners are expected to award the contract for additions to the heating plant in the W. B. Thomas hose house in a few days. The commission has also received bids for a low pressure steam heating plant for the F. L. Allen hook and ladder company house on Banks street.

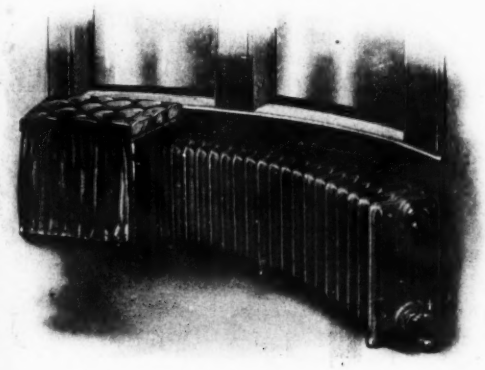
Lawrence, Mass.—Plumbing Inspector Collington has been instructed to proceed against the owners of a factory for violation of the city plumbing regulations. The inspector reported to the board of health that closets had been put in at their plant in violation of the plumbing rules.

Fitchburg, Mass.—James Barr, of 31 Lincoln street, has the contract for the installation of a new steam heating system in the residence of W. K. Younglove, City Hall square; steam heating and plumbing in the residence of E. S. Boutwell on Symonds street, plumbing in the residence of Mrs. Oby on Lunenberg street, plumbing for Geo. Breckenridge on East street, plumbing in the residence of Wm. J. McCoy on Highland avenue extension, and plumbing in the residence of Geo. A. Cruikshanks on East street.

Worcester, Mass.—Plumbing contracts have been let recently as follows: A. E. McDonald, dwelling houses at 61 Stafford street, and 57 Stafford street, and at 59 Stafford street, all owned by Mrs. Mary Brown. J. D. Rutman, tenement and store building at 87 and 89 Water street, owned by B. Cotton. Patrick F. McGuinness, dwelling house at 226 Cambridge street, owned by Mrs. Ellen Laughlin. C. F. Ostberg, dwelling house at 27 Charlotte street, owned by A. H. Carnie; factory at 69 Hammond street, owned by the Wright Wire Co. Field & Fielder Co., administration building of the Memorial Hospital on Belmont street. Thomas J. McManus, tenement house at 6 Harrington way, owned by Mrs. Maud Willette; tenement and store building at 50 Lamartine street, owned by Shapiro and Kaplan. Parker J. Young, schoolhouse on Kendall street, owned by the city of Worcester. C. A. Middlemas, tenement house on Chandler street owned by Vaughan & Rhodes. James F. Dowd, dwelling house on Chester street, owned by R. C. Streeter. **A. H. French.**

Radiator Assortment.

It is only human nature to like a large assortment to choose from. This is one reason householders enjoy buying AMERICAN Radiators, for in so large a selection of patterns, heights, shapes and designs, the desired style can always be found.



AMERICAN Rococo Curved Window Radiators always attract the housewife.

The houseowner who buys AMERICAN Radiators and IDEAL Boilers gets "just the heating outfit he wanted" and is doubly satisfied—both with the goods and with the Steam Fitter who handles them.

AMERICAN RADIATORS & IDEAL BOILERS

AMERICAN RADIATOR COMPANY

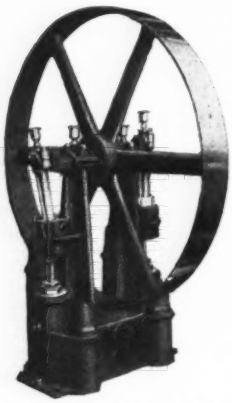
General Offices, 282-286 Michigan Ave., Chicago.

New York	Cincinnati	Cleveland	Atlanta	Brantford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco

With the Makers

House Pump Talk.

The demand for pumps for house or domestic service for the last few years has been increasing by leaps and bounds, and while there has been some thought given to the development of this line, the facts are that competent engineers have been so busy perfecting the large pumping engines that they have never taken the time to develop the house pump line to anything like the degree of perfection that has been attained in the larger pumps. The Sanitary Pump Company of Dayton, Ohio, claim that they have within the past year developed the smaller pumps to a degree of perfection which is equal to or even greater than that ever reached in the larger pumping engines. This is due to the fact that their vice-president and engineer, Mr. A. J. Pocock, has been one of the foremost factors in the development of the large pumping engines and he is the first of the leading hydraulic engineers to take up the small line of pumps and develop them along scientific lines.



The "Sanitary" Duplex pump.

The latest line of pumps put on the market is their new Duplex double acting type of vertical power pumps shown in the accompanying illustration, and they claim that this line has more points of excellence than any other line of pumps ever made. In the first place this is the first successful double acting small power pump ever made. It pumps twice as much water as a single acting pump of same size, it pumps one-fourth more water than the Triplex single acting pump of same size and in either case it costs less per gallon delivered both in power consumption and in original cost. Friction in this pump has been reduced to the minimum and it operates therefore with a minimum of power. Instead of having three bearings for crank shaft, three connecting rods with bearings at either end and three large plungers to keep packed, as is the case with the triplex single acting pumps, the "Sanitary" pump has only two bearings, two connecting rods, and only two small stuffing boxes for piston rods to keep packed.

This line of pumps, as can readily be seen, has been designed by an engineer of marked ability, and it will also be noted that the trade mark of "Simplicity simplified," adopted by the Sanitary Pump Company, has been rigidly carried out in every detail. The standard construction of these Duplex pumps is: Cast steel crank shafts, bronze connecting rods, brass piston rods, brass plunger working cylinders and iron plungers. These pumps are the product of twenty-five years of experience and it is claimed have been designed not only for pressures up to 150 lbs. per sq. in., but for great suction power, and they will successfully draw water a vertical distance of 25 feet. This latter point has always been one of the troubles with small pumps of this same general type, and this alone places the Sanitary Duplex Pump in the same class with larger pumping engines. Taking the above claims together with the claim that they do more work with less power, that they are the standard of excellence in design and construction, and with the long experience they have had in this line, The Sanitary Pump Company believe that they have solved the small pump problem, and that they have in every particular the best pumps ever placed on the market.

Prices and further details will be interesting to all dealers using pumps for domestic service and the manufacturers will be glad to furnish such information on request, mentioning "Domestic Engineering." Their address is The Sanitary Pump Company, 10-12 South Canal St., Dayton, Ohio.

HOW HE GOT EVEN WITH HIS GAS METER.

"Machinery is delicate stuff," said Captain Watt, of the record-breaking Lusitania, recently, while talking about machinery, "and the amateur is wise who lets it alone. You have heard about the man who blew down into his gas meter?"

"No."

"Well, at the club one night, a certain man complained bitterly about his gas bills.

"'Hang it all,' he said, 'my bills are something enormous. I'm sure I don't burn all that gas. The company, consarn it, is cheating me.'

"A friend spoke up and said:

"'Look here, do you want to know how to get the better of the gas company?'

"'Gee, I just do!' exclaimed the man.

"'Then,' said the friend, 'blow down the meter. Every night, before you turn in, blow down the meter. The meter, you see, is full of little wheels, all turning, turning, piling up big bills against you every time you light the gas. But just blow down the pipe and'—

"The friend gave a loud laugh at the delightful thought.

"'Just blow down the pipe, and—he, ha, ha—all the little wheels will turn the other way.'

"The man thanked his friend for this good and valuable advice, went straight home, and blew a long and powerful blast down the pipe of the gas meter before retiring. He did this every night. Not once did he forget, the last thing before going to bed, to blow down the meter with terrific force.

"Well, in due course, at the month's end, the inspector came.

"The man welcomed the inspector a trifle nervously, and hung about the cellar door to hear what the fellow would have to say after his inspection.

"The inspector emerged from the cellar studying a column of figures with a puzzled frown. He looked up at the master of the house and said in a strange voice:

"'Well, Mr. Smith, I don't know what the dickens has been happening to your meter, but the company owes you $34.07.'"

Patents

902,295. **Water-Closet.** Frederick O. Hilfiker, Ilion, N. Y.

902,575. **Heating System.** Egbert H. Gold, Chicago, Ill.

902,583. **Lubricator.** John C. Hill, Chicago, Ill.

902,593. **Hot-Water Tube.** Leo H. Meres, Lorain, Ohio.

902,600. **Valve-Controlling Apparatus.** William B. D. Penniman, Baltimore, Md.

902,622. **Humidifier.** Charles Subert, Chicago, Ill.

902,657. **Tube or Pipe Cleaner.** Erik Hoglund, Ottumwa, Iowa.

902,696. **Elbow Connection for Radiators.** Joseph J. Stockdon, Somerville, Mass.

902,742. **Pipe-Bending Machine.** Charles F. Kirby, Jr., San Francisco, Cal.

902,825. **Ball-Cock.** Henry N. Libbey, Boston, Mass., assignor to Elbridge G. Kelley, Peabody, Mass.

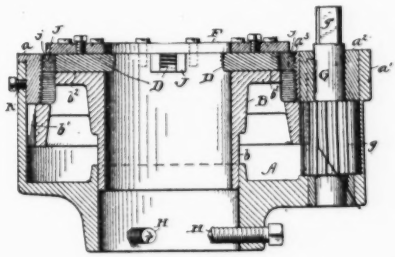
902,847. **Water-Purifying Apparatus.** Adolph Sorge, Jr., Chicago, Ill.

902,971. **Filter.** William B. Klein, Chicago, Ill.

902,854. **Flushing-Valve.** Frank T. Callon, Indianapolis, Ind., assignor of one-third to himself, one-third to Milton A. Woollen, and one-third to Harry A. Callon, Indianapolis, Ind.

902,870. **Soldering Apparatus.** David Genese, Baltimore, Md.

902,599. **Die-Stock.** Herman W. Oster, Cleveland, Ohio, assignor to The Oster Manufacturing Company, Cleveland, Ohio, a corporation of Ohio.

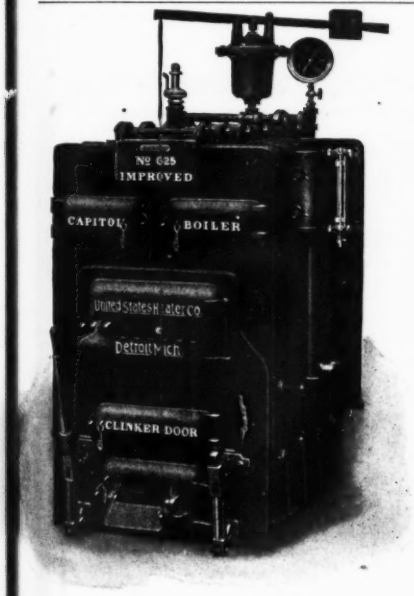


902,878. **Rotary Pump.** Thomas R. Hayton, Mount Vernon, Wash.

902,888. **Fluid-Meter.** John W. Ledoux, Swarthmore, Pa., assignor to Simplex Valve & Meter Company, Camden, N. J., a Corporation of New Jersey.

902,894. **Water-Gage.** Christopher J. Matthews, Grand Rapids, Mich.

902,897. **Closet Connection.** George M. McCloskey, New York, N. Y.



Improved Capitol Boilers

Consider the following practical features which unite in making the **Improved Capitol Boiler** the best boiler on the market—bar none.

Divided sections—light weight units—space saving countersunk header—slip nipple construction—unequaled amount of prime heating surface—free water ways—improved grate construction—large fire chamber—deep fire pot—ample ash pit—reduced number of parts—low water line—large feed doors—accepts any kind of fuel, including coke and wood and low grades of coal—simple in operation—easy to understand—quickly appreciated by the purchaser.

Send for descriptive literature and catalog. You cannot get in touch with the best boiler on the market too soon.

United States Heater Company.

General Offices and Works: Fort St., and Campbell Ave., DETROIT, MICH.

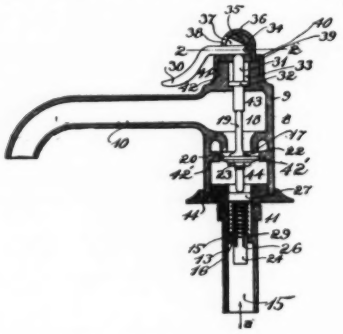
Branches:

DETROIT,	139 Jefferson Avenue
NEW YORK,	129 Worth Street
CHICAGO,	34 Dearborn Street
KANSAS CITY, MO.,	120 W. 11th Street
OMAHA, NEB.,	916 Farnam Street

Sales Agencies:

ST. LOUIS, MO.,	L. M. Rumsey Manufacturing Co.
DENVER, COLO.,	Kellogg & Stokes Stove Co.
MINNEAPOLIS, MINN.,	Plumbing & S. F. Supplies Co.
NORFOLK and RICHMOND, VA.,	Virginia-Carolina Supply Co.

902,786. Faucet. Charles B. Whitney, Hyde Park, Mass., assignor to The Simplex Faucet Company, a Corporation of Massachusetts. The most notable claim for this invention reads as follows: "A faucet comprising in its construction a casing provided with an inlet chamber and an outlet chamber, there being an inlet passage connecting with said inlet chamber, a valve seat located in said casing between said inlet and out-



let chambers, a valve adapted to be pressed against said seat by the pressure of the water, and a hollow differential plunger adapted to slide in said inlet passage and bearing against said valve, said plunger having sliding contact with the walls of said inlet passage."

902,905. Humidifier for Radiators. George J. Palmer, West Chester, Pa.

902,952. Valve. Lewis W. Eggleston, Chicago, Ill.

903,007. Water-Heater. Edwin Ruud, Pittsburg, Pa.

903,022. Sewer-Cleaning Apparatus. William H. Stewart, Boston, Mass.

903,061. Filter. Louis H. Deppe, Beardstown, Ill.

903,070. Water-Filter. Frank C. Farnell, Los Angeles, Cal., assignor of one-third to Calvin F. Hunter and one-third to Thomas N. Camfield, Los Angeles, Cal.

903,081. Waste for Bath-Tubs, Basins, and Like Fixtures. Patrick F. Guthrie and Thomas Hayes, Nutley, N. J.

903,137. Vise. Frank W. Hubbard, Erie, Pa., assignor to Reed Manufacturing Company, Erie, Pa., a Corporation.

903,138. Method of Purifying Water. William M. Jewell, Park Ridge, Ill., assignor to The Jewell Engineering Company, Chicago, Ill., a Corporation of Illinois.

903,142. Pressure-Regulator. Frank A. Simonds, Grand Rapids, Mich., assignor of one-fourth to Harry L. Gregory and one-fourth to William H. Canfield, Grand Rapids, Mich.

903,150. Method for Purifying and Humidifying Air. William G. R. Braemer, Buffalo, N. Y., assignor to Warren Webster & Company, a Corporation of New Jersey.

Burlington, Iowa.—The Russell Sewage Disposal Company of this city, has finished the installation of a sewerless sewage disposal system at L. T. Mosser's modern residence at Abingdon, Ill.—Adv.

NON-INFRINGEMENT NOTICE

To Whom It May Concern:

The Consolidated Engineering Company on page 21 of the October 24th issue of this Journal, published an infringement notice claiming that they have brought suit against us for alleged infringement on their Thermofier Valve.

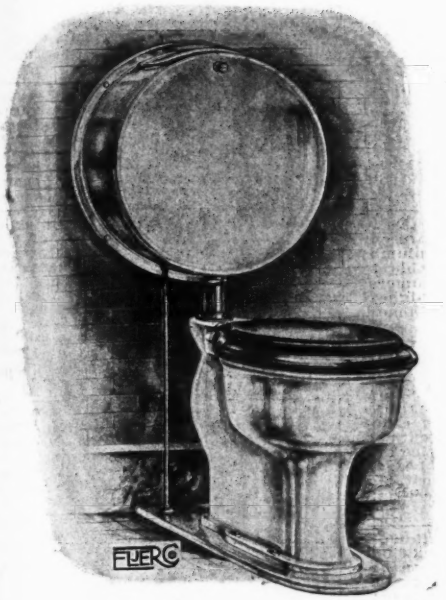
In answer to same would say, that we wrote the attorneys for the Consolidated Engineering Company on October 17th that they must cease their bull-dozing tactics in the form of sending threatening letters to our customers who wish to buy our Radifier Valve to be used on Vacuum Systems without payment of royalty, and if they would not desist from doing this we would be obliged to bring suit against them for interfering with our business.

Any person interested in this matter and who desires a copy of our original letter to the attorneys of the Consolidated Engineering Company, may, upon requesting us, receive a copy.

We stand ready and will defend and hold our customers free and harmless from any claims for damages for any alleged infringement of any patent or patents in the use of our Radifier Valves.

MONASH-YOUNKER CO.

90 Center St., NEW YORK **203 S. Canal St., CHICAGO**



PATENTS NOW PENDING
Both mechanical and design

ELJER China Tank

Same material as bowl with no metal linings to corrode or leak. No wood to open up at joints or become saturated with foul dampness. Extra heavy fittings throughout.

ELJERCO

CAMERON
WEST
VIRGINIA

Matchless

No other name would describe it

Printers' Ink is not Proof but a trial Fair and Free is the Best

One set for all sizes or one set for each size

Self Locking Chuck fits any size of pipe

AUTOMATIC RECEDING DIES

Cut long or short, straight or crooked threads

THE OSTER MANUFACTURING COMPANY

2160 East 61st Street, CLEVELAND, OHIO

CLASSIFIED ADVERTISEMENTS

The rate of advertising under this heading is 10 cents a line an insertion, remittance to be made with order. The average advertisement runs five words to a line. To insure insertion in this column copy should be received not later than Wednesday afternoon.

Help Wanted.

WANTED—EXPERIENCED HEATing and plumbing goods salesman, acquainted in Central New York. Address No. 970, "Domestic Engineering," Chicago.

WANTED—A MAN WHO UNDERstands covering pipes; must be a resident of Chicago; one with business getting ability who wants to go into business. Address No. 952, "Domestic Engineering," Chicago.

WANTED—AN EXPERIENCED salesman, well acquainted with jobbing trade in Central West, by established manufacturer of brass valves for heating trade, whose product is well known. State age, experience, salary desired. Address No. 976, "Domestic Engineering," Chicago.

WANTED—A MAN OF ENERGY and ability to take charge of our plumbing, tinning and steam heating department. Must possess sufficient executive or business ability to take charge of this end of the business and make it successful. Will sell an interest if party wants to buy and treat the right man liberally as to terms. Our business is large and this end of it has been very profitable. Unusual opportunity for the right man. References required. Rock Springs Lumber Co., Ltd., Rock Springs, Wyo.

Patents.

Don't spend a dollar on Patents until you have read our free book. Benjamin & Bassett, 514 F street, Washington, D. C.

Situations Wanted.

MANAGER OR SUPERINTENDENT, experienced in steam or plumbing brass work is open for engagement. Expert in cost account work and as a "leak stopper." Can produce results and save money. Address No. 962, "Domestic Engineering," Chicago.

SALESMAN—EXPERIENCED IN both plumbing and steam lines, with thorough acquaintance among Eastern, Southern and Middle West jobbing trade, wants a change. Might entertain taking good lines on commission in New York and vicinity. Address No. 963, "Domestic Engineering," Chicago.

For Sale.

FOR SALE—A PLUMBING AND HEATING business: town of 5,000; can stay in my building: Address William Haworth, Kaukauna, Wis.

FOR SALE.—ONE FOUR HUNDRED horse power Warren Webster feed water heater, safety valve grease controller, complete; used six months; reasonable. Address M. J. Hawkins, Albany, N. Y.

FOR SALE—BEST NATURAL GAS appliance and plumbing business in best Oklahoma city, working ten men. Owners covered over with other business. Address No. 974, "Domestic Engineering," Chicago.

FOR SALE—PLUMBING AND heating shop in Michigan town, 13,500 inhabitants; only one other shop in city; good reasons for desiring to sell. Address No. 972, "Domestic Engineering," Chicago, Ill.

Agencies Wanted.

SALESMAN—EXPERIENCED, DEsires to represent manufacturers of plumbing, steam and gas specialties, salable to jobbers' trade in New York and vicinity. Address Pearce & McCall, 140 W. 42nd St., New York City.

EXPERIENCED AND RESPONSIble salesman desires to represent in Chicago manufacturers of plumbers' or steam specialties salable to jobbers, the trade or to consumers; nothing trifling considered; highest references. Address No. 944, "Domestic Engineering," Chicago.

BOOKS.

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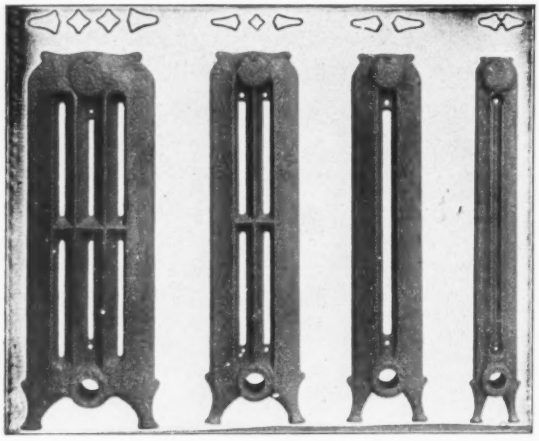

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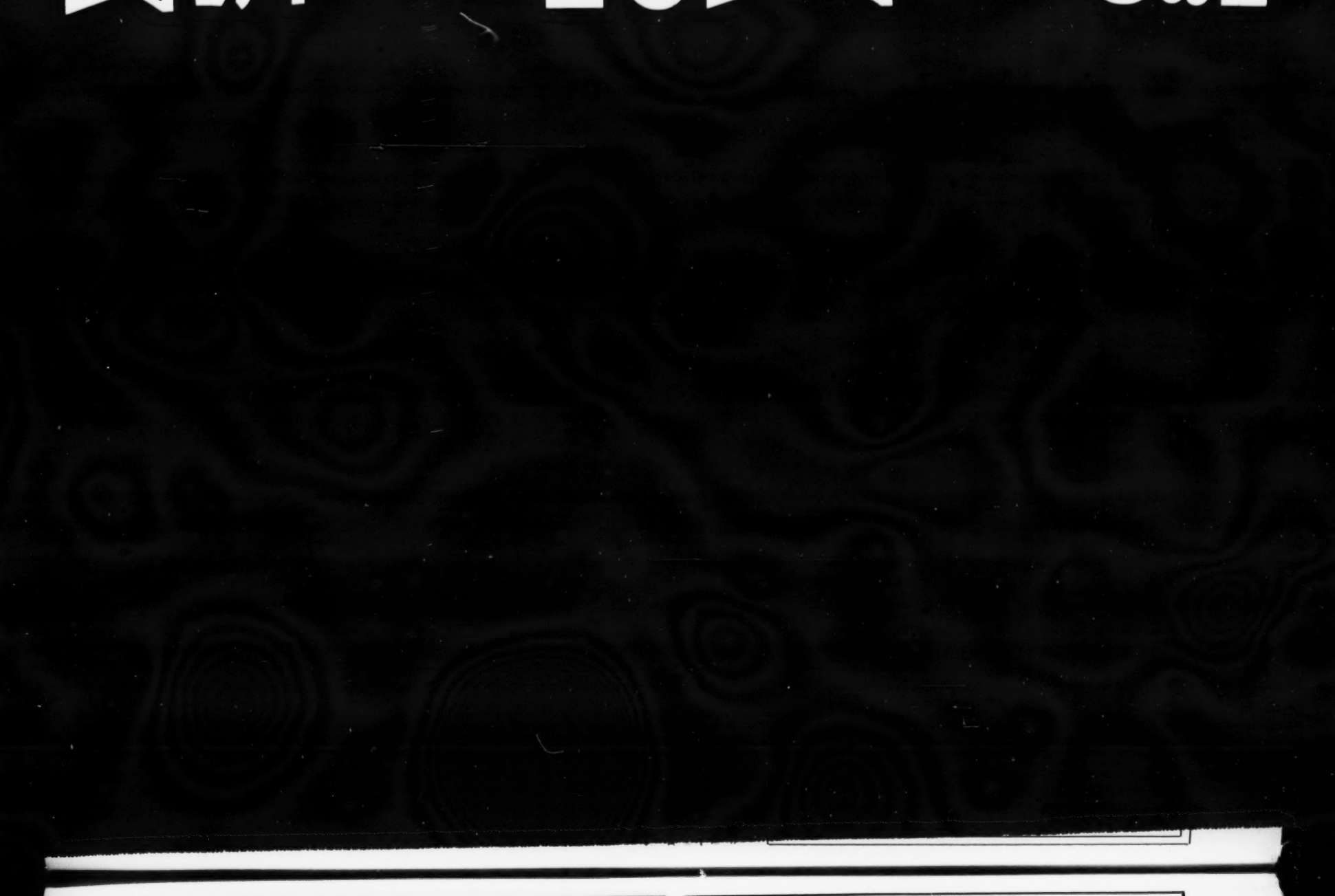
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